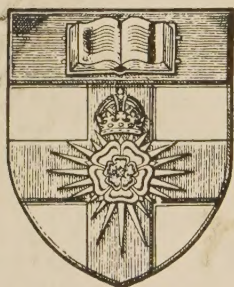


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THE
SURVEYORS' INSTITUTION

(Incorporated by Royal Charter),

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

TRANSACTIONS.

VOL. XL.

SESSION 1907-1908.



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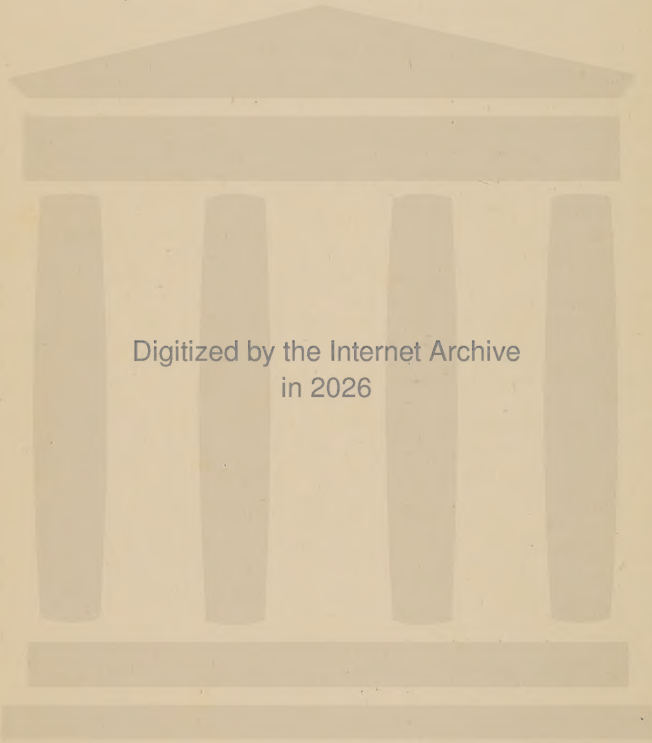
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The Institution does not, as a body, hold itself responsible for statements made or opinions expressed either in the Papers read or the discussions which have occurred at the Meetings.

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The Surveyors' Institution

INCORPORATED BY ROYAL CHARTER),

12, GREAT GEORGE STREET,

WESTMINSTER, S.W.

OFFICERS, 1907-1908.

COUNCIL.

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JOHN WORNHAM PENFOLD (London)

ALEXANDER ROSE STENNING (London)

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(Loughborough)

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(Lord Chief Justice of England)

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1868 *John Clutton*

1870 *Richard Hall*

1872 *Edward Norton Clifton*

1874 *Thomas Huskinson*

1876 *Edmund James Smith*

1878 *William Sturge*

1880 *Edward Ryde*

1883 *Thomas Smith-Woolley*

1885 *Edward I'Anson*

1886 *William James Beadel, M.P.*

1888 ELIAS PITTS SQUAREY

1890 *Robert Collier Driver*

1892 *Charles John Shoppee*

1894 *Thomas Chatfield Clarke*

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1897 *Christopher Oakley*

1898 ROBERT VIGERS

1899 THOMAS MILLER RICKMAN

1900 *John Shaw*

1901 SIR JOHN F. L. ROLLESTON, M.P.

1902 ARTHUR VERNON

1903 *Alfred Buck*

1904 HERBERT THOMAS STEWARD

1905 CHARLES BIDWELL

1906 GEORGE LANGRIDGE

(The names of those deceased are printed in italics.)

Honorary Secretary.

PERCIVAL CURREY.

Secretary.

ALEXANDER GODDARD.

The Surveyors' Institution

(INCORPORATED BY ROYAL CHARTER)

Is established—

1. To secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a Surveyor, viz.—the art of determining the value of all descriptions of landed and house property, and of the various interests therein; the practice of managing and developing estates; and the science of ad-measuring and delineating the physical features of the earth, and of measuring and estimating artificers' work.
2. To promote the general interests of the profession, and to maintain and extend its usefulness for the public advantage.

THE INSTITUTION was established in 1868, was incorporated by Royal Charter in 1881, and has a total membership of between 3,000 and 4,000.

THE INSTITUTION consists of four classes, viz.—FELLOWS, PROFESSIONAL ASSOCIATES, ASSOCIATES, and HONORARY MEMBERS, with a class of STUDENTS attached.

A FELLOW must have qualified for that position by having acquired a practical knowledge of surveying in one or other of its branches as above defined, and have held for at least five years a responsible position in the profession; and must have passed the Examination declared in the Rules of Examination to appertain to the class of Fellows, or some other Examination in the United Kingdom or the Colonies which the Council may declare to be equivalent thereto.* A Fellow has the right, conferred by the Charter, to use the letters F.S.I. after his name. A Fellow has also the right, under By-Laws allowed by H.M. Privy Council, to describe himself as “Chartered Surveyor.”

A PROFESSIONAL ASSOCIATE must be more than twenty-one years of age, a Surveyor by profession, in practice on his own account or employed as an Assistant in a Surveyor's Office, and qualified for the class by having passed the Intermediate Examination, or some other Examination in the United Kingdom or the Colonies which the Council may declare to be equivalent thereto.* A Professional Associate

* *The Council possess only a very limited dispensing power as regards the Examinations.*

has the right, conferred by the Charter, to use the letters P.A.S.I. after his name. A Professional Associate has also the right, under By-Laws allowed by H.M. Privy Council to describe himself as "Professional Associate Chartered Surveyor."

AN ASSOCIATE must be more than twenty-one years of age, not a Surveyor by profession, but his pursuits must be such as to qualify him to unite with Surveyors in the advancement of professional knowledge.

AN HONORARY MEMBER must be a person who, either by reason of his position or experience, or his eminence in science, may be enabled to render assistance in promoting the objects of The Institution, but who is not engaged in practice as a Surveyor in Great Britain or Ireland. He has the privilege of being present and taking part at all Ordinary General Meetings, and of access to the Library, but no right of voting, discussing, or otherwise interfering in the affairs of The Institution; nor is he called on to contribute to its funds.

STUDENTS (who must not be under eighteen years of age) qualify as such by passing the Preliminary Examination. Candidates for Studentship who can produce a Certificate of having passed one of the Examinations mentioned in the Rules, are exempted from this Examination, and may be admitted by the Council on the recommendation (according to a form) of a Member of The Institution; but it is obligatory on all Students to undergo the Intermediate Examination at the close of their Student course, at the time and under the conditions applying in each particular case under the Rules of Examination.

The Council may accord to Students such privileges, subject to such terms, regulations and restrictions as they shall from time to time prescribe.

Scholarships for Students have been instituted at the Universities of Cambridge and North Wales, Bangor, and at the Armstrong College, Newcastle-on-Tyne, respectively of the value of £80, £50, and £50 per annum, and tennable for three years. Particulars may be obtained from the Secretary of the Institution.

Any person desirous of being admitted into The Institution (excepting to the class of Students) must be proposed and recommended according to a form, in which the full name, place of business (if any), usual residence, and qualifi-

cations of the candidate must be distinctly specified. This form must be subscribed by him, and signed by at least six Fellows or four Fellows and two Associates, certifying a personal knowledge of the candidate; or by four Members of the Council, of whom the President shall be one, after careful inquiry into the antecedents of the applicant.

The proposal so made, being delivered to the Secretary, will be submitted to the Council, who, on approving the qualifications, will nominate the candidate for election by ballot.

The following are the rates of contribution to the funds:—

	Annual Subscription.			Admission Fee.		
	£	s.	d.	£	s.	d.
<i>Student</i>	1	1	0	—		
<i>Associate</i>	2	2	0	3	3	0
<i>Professional Associate</i>	2	2	0	3	3	0
<i>Fellow</i>	3	3	0	5	5	0

No person can become a Member (other than an Honorary Member) of The Institution, unless and until he pays as his first Subscription to The Institution, in the case of becoming a Fellow of The Institution, the sum of Eight Guineas, in the case of becoming a Professional Associate of The Institution, the sum of Five Guineas, and in the case of becoming an Associate of The Institution, the sum of Five Guineas.

All Fellows, Professional Associates, and Associates are required, within twelve months after their election, to deliver to the Council an original Paper on some subject connected with the profession, or to make a donation to the Library or Collection.

The affairs of The Institution are under the management of a Council, which is elected annually, consisting of a President, four Vice-Presidents, sixteen Fellows, two Professional Associates, and two Associates.

The Session of The Institution commences annually on the second Monday in November, and continues to the end of May. The Ordinary General Meetings are held on every alternate Monday during the Session. At these Meetings original communications are read on professional subjects, and their merits fully and freely discussed. Every Member has the privilege of introducing one visitor to these Meetings. Members are entitled to a copy of any printed publication issued by The Institution after their admission.

C. Phelps

THE OPENING ADDRESS

BY

THOMAS TAYLOR WAINWRIGHT (PRESIDENT),

AT THE ORDINARY GENERAL MEETING OF

THE SURVEYORS' INSTITUTION,

NOVEMBER 11TH, 1907.

W.B.

Presentation of the Council Gold Medal to David Murray, LL.D.

The PRESIDENT said he felt sure all present would agree with him that one of the most pleasing duties he had officially to perform was to act for the Council in awarding a well deserved recognition of merit. He had the pleasure of attending the Meeting of The Institution in Glasgow, in May last, where the Scottish Members accorded their guests not only a most hospitable welcome, but also the intellectual treat of listening to three Papers read by Scotsmen all capable of dealing with subjects not only of local but of national interest.

Among those Papers one was super-eminent in the opinion of the Council and to that, as the best Paper read before The Institution during the past session, they had awarded the highest mark of appreciation within their power. He was sure all would agree with this decision who had read Dr. David Murray's Paper on

"The Valuation Roll in Scotland and the proposal to "enter Land Values upon it." To him had been awarded the Council Gold Medal of The Institution, and while he felt sure that it would be a pleasure to him to receive it and a great satisfaction to The Institution to bestow it, he could hardly hand it to him without a certain amount of envy, in that such an honour could come only to those few who were recognised as men of super-eminent abilities. He had now the very great pleasure of handing to Dr. Murray the Council Gold Medal for the best Paper read before The Institution during the session 1906-1907.

Mr. DAVID MURRAY, LL.D., said he could only express to the President and the Members of The Institution his gratitude for the great and singular honour accorded to him in the bestowal of the medal.

The subject with which his Paper had dealt was, he felt convinced, one of exceeding and national interest. At the present time it was in abeyance, but it was said that in the next Session of Parliament there was to be introduced a Bill to apply, not only to Scotland, but to England as well. He thought everyone intimately acquainted with the subject would feel that if such a Bill were passed it would cause extraordinary trouble and difficulty to all concerned.

He was personally inclined to think that although perhaps the Bill might only be passed by one House in order that it might be rejected by the other, the Upper House might be better advised to let it pass in order that those who believed in it might find by experience the position in which they would be placed. It was a subject which affected, not one class of the community only, but every class, and no matter who or what he

was who had to deal with valuations under such a measure, he would find himself in practice involved in infinite difficulty.

Again he thanked the President, the Council, and the Members for the distinguished honour done to him in awarding him so very handsome a medal.

The PRESIDENT then delivered his Opening Address as follows:—

GENTLEMEN,

Twelve months have rapidly passed since I reached the position next in succession to that most coveted by Members of The Institution, who have now done me the honour of electing me President. It now becomes my duty to sustain during the coming Session the high traditions of that office, and by endeavouring to merit the confidence placed in me, to retain that good opinion of my fellow Members which has elevated me to a position so important, but at the same time so difficult and responsible.

The appreciation of these responsibilities caused, I must admit, some hesitation on my part as to my ability to fill the position in a befitting manner. To the occupant of this chair they, perhaps naturally, seem enhanced by the important services rendered to The Institution by my predecessors, some of whom in my early days I had the honour—and it was no slight one—of knowing personally. I need only mention such names as those of John Clutton, Edward Ryde, Robert C. Driver, William Sturge, and William J. Beadel, in order that you may understand my scruples. I felt, however, reassured by the conviction that I might rely upon the full and friendly co-operation and assistance of the Past-Presidents and Members of the Council in

the many and varied questions which must always arise in the conduct of the business of an important institution such as our own. Of this I acknowledge the greater need in that I recognise the position I now occupy to be due not so much to my own personality or merit as to the evolution of time and the custom which has arisen of electing, in ordinary circumstances, each Member of the Council in rotation to the post of honour.

I am sure that all my fellow Members will assist me in my earnest endeavour, so that, when my period of office arrives, in due course, at its conclusion, I may be able to pass on the badge of office to my successor with the honour—conferred by its long line of previous holders—untarnished and undimmed.

I feel the greater responsibility in this matter in that this is the first time a Member from north of the Midlands has been elected President; and in view of the representative character of our membership in the North, and the magnitude of the interests there committed to our care, I feel bound to do my best to insure that nothing shall prejudice a similar choice in the future.

In the past twenty years the membership in Lancashire has increased from 33 to 131, and in Yorkshire from 40 to 136; so that, apart from the Metropolitan area and Home Counties, The Institution is, I believe, better represented in those two counties than in any other part of Great Britain. The recognition which has been accorded them this year in the election of your President has therefore been not altogether undeserved, while that it has been appreciated by Members practising in those parts is evidenced by the number of kind and congratulatory letters which I have received.

My professional work lies so largely in the Arbitration Courts, that I propose to follow the practice of former Presidents, in confining my remarks mainly to my own branch of the profession, and to deal in some detail with compensation questions; but before doing so I may perhaps be allowed to refer shortly to a few points which may be of general interest, in connection with Lancashire and Yorkshire, the two counties most familiar to me.

In his able Presidential Address some ten years ago, Mr. Robert Vigers referred to the extraordinary growth in population and value which had taken place in the Metropolis during his own experience, but I think that it would not be difficult to find in Lancashire and Yorkshire cases which might prove equally, or even more, astounding. The increase of population in these two counties, even taking their whole area, is remarkable, showing as it does 3·661 persons per acre in Lancashire at the time of the last census, compared with 2·018 in 1861, and in Yorkshire ·923 persons compared with ·523.

The following are the figures for each decade since 1861:—

	LANCASHIRE.			YORKSHIRE.	
	No. of persons.			No. of persons.	
1861	.	2,429,440	.	.	2,033,610
1871	.	2,819,495	.	.	2,436,355
1881	.	3,454,441	.	.	2,866,564
1891	.	3,926,760	.	.	3,208,521
1901	.	4,406,409	.	.	3,584,762

It is satisfactory to note that statistics with regard to the number of inhabited houses show that in this respect there has been an increase something more than proportionate to that of the population; in Lancashire the number of persons inhabiting each house having dropped from 5·542 in 1861 to 4·964 in 1901, the corresponding figures

for Yorkshire being 4·804 and 4·595 respectively. From the point of view of sanitation and health, this increase in house accommodation agrees with other evidence we have of the improved conditions under which the industrial classes now live.

As might be expected, values have kept pace with population, and although I could give instances of exceptional appreciation which have come to my personal knowledge, it would, I think, be better that I should quote from official records, in that they cover a wider area and are always capable of verification. For this reason I turn to the Local Taxation Returns, wherein I find that, taking the latest available figures, the rateable value of Lancashire has grown in thirty years from thirteen millions sterling to over twenty-four millions, and in Yorkshire from well under eleven millions to nearly eighteen and a half millions. These figures are stupendous enough, but were I to take smaller areas a vastly greater proportionate growth might easily be shown.

Facts and figures giving the rise and fall of values are always of interest to those engaged in a profession so closely connected with real estate as is our own, but perhaps equally interesting to surveyors would be a statement showing the amount expended upon public works constructed under compulsory powers, were this available.

In a strictly commercial and manufacturing district, such as that of which I speak, these works are necessarily numerous; the best known of our own day being the Manchester Ship Canal.

Through the kindness of Mr. J. D. Wallis, I am in a position to deal with the cost of that gigantic enterprise in some detail. In all, $4,871\frac{3}{4}$ acres have been purchased

at a cost, including compensation, of £1,666,791. In addition the canal company purchased the Bridgewater Canal undertaking for the sum of £1,710,000, and afterwards sold off the Duke's Dock, which formed part of that undertaking, to the Mersey Docks and Harbour Board for £522,000. The total cost of construction, including plant and equipment, amounts to £10,817,830, exclusive of the cost of land, of the Bridgewater Canal and the engineering, parliamentary and general expenses and interest. The aggregate capital expenditure at the present date is upwards of 16½ millions sterling.

But complete statistics such as these are unfortunately seldom available, except in connection with improvements carried out by local authorities. Large sums have been borrowed and spent by them on reproductive works, wherefrom it is presumed a profit or net income may be derived. Under this head come tramways, gasworks, electric power and lighting works, and light railways. Other large amounts have been employed in non-productive works, such as sewerage, fire stations, roads, highways, bridges, waterworks, widening and improvement of streets, and the important item of repaving main or adopted streets. Many of these can only be carried out under the authority of special Acts of Parliament, enabling the necessary money to be borrowed for the requisite lands and premises to be acquired.

I am indebted to the courtesy of the Local Government Board for the following statement, showing, for Lancashire and Yorkshire respectively, the amount of outstanding loans of the under-mentioned classes of local authorities in the years 1880 and 1905, and the approximate amount of loans repaid by those authorities during the years 1881 to 1905, inclusive:—

Local Authorities.	Tramways and Light Railways.	Waterworks.	Gasworks.
Year 1880.	£	£	£
LANCASHIRE :			
Town Councils			
Urban Sanitary Authorities (other than Town Councils)			The amount of respect of each of
Joint Boards and Committees			
Rural Sanitary Authorities and Highway Authorities in Rural Districts			
Total—Lancashire—Year 1880			
YORKSHIRE :			
Town Councils			
Urban Sanitary Authorities (other than Town Councils)			The amount of respect of each of
Joint Boards and Committees			
Rural Sanitary Authorities and Highway Authorities in Rural Districts			
Total—Yorkshire—Year 1880			
Year 1905.			
LANCASHIRE :			
Town Councils	6,932,356	17,844,512	6,692,676
Urban District Councils (other than Town Councils) ...	499,973	476,165	330,270
Joint Boards and Committees	—	3,936,561	365,308
Rural District Councils ...	—	79,794	—
Total—Lancashire—Year 1905	7,432,329	22,337,032	7,388,254
YORKSHIRE :			
Town Councils	4,424,378	16,231,798	4,618,960
Urban District Councils (other than Town Councils) ...	80,546	732,520	700,237
Joint Boards and Committees	—	—	77,737
Rural District Councils ...	—	186,439	—
Total—Yorkshire—Year 1905	4,504,924	17,150,757	5,396,934

The amount of loans repaid during the years 1881 to 1905 inclusive

In Lancashire

In Yorkshire

These sums, which include amounts taken out of sinking funds and other
amounts paid to those funds, but not so

* In certain cases the outstanding liabilities for loans raised by Town
Joint Boards or Committees

Electric Lighting.	Sewerage and Sewage Disposal Works.	Highways, Bridges, and Ferries.	Other purposes (excluding Elementary Education).	Total (excluding Elementary Education).
£	£	£	£	£
				20,430,869
the loans outstanding in 1880 in these purposes cannot be given.				2,707,612
				5,000
				56,710
				23,200,191
				13,723,853
the loans outstanding in 1880 in these purposes cannot be given.				1,853,125
				16,303
				49,448
				15,642,729
6,205,459	5,125,210	8,191,646	16,544,690	*67,536,549
145,194	1,102,325	447,096	886,338	*3,887,361
—	172,843	—	231,786	*4,706,498
—	150,219	63,912	11,887	305,812
6,350,653	6,550,597	8,702,654	17,674,701	76,436,220
3,463,857	3,424,728	7,819,484	7,597,386	47,580,591
170,710	1,102,745	346,143	451,179	3,584,080
—	56,387	—	111,908	246,032
—	357,869	19,398	28,805	592,511
3,634,567	4,941,729	8,185,025	8,189,278	52,003,214

by the above-mentioned classes of authorities appears to have been :—

... upwards of £21,000,000.

... upwards of £12,000,000.

similar funds and applied to the repayment of loans, do not include applied before the end of the year 1905.

Councils and other Urban District Councils have been transferred to appointed by those Councils.

Figures of such magnitude, piled up in so short a period, must necessarily give rise to serious meditation on the part of every thinking man, but this was not the text upon which I wished to dilate. It is true that the effect of the rapid accumulation of local burdens on real estate is one on which members of our profession are specially fitted to speak, but my object in quoting the above table was to draw attention to the large field thus opened out for the employment of the surveyor in the arbitrations which must naturally ensue when property is taken for public purposes. It is in this field that a large part of my practice lies, and I am thus influenced to speak to you to-day upon the apparently commonplace subject of compensation cases, a subject with which all of us are more or less acquainted, and in which many Members have considerably wider experience than myself.

I trust, however, that you will bear with me and deal indulgently with my remarks, for although to an outsider the subject of compensation may appear simple and easily understood, in practice its many ramifications make it the reverse. The matters in dispute are often most intricate and abstruse, so that the surveyor, for whichever side he appears, cannot fail to find a difficulty in arriving at a decision satisfactory to himself and at the same time capable of being put in a reasonable and convincing shape before the tribunal appointed to decide between the parties.

To some of us has been accorded—and I think it may be referred to with proper pride—the privilege of long association with their fellow surveyors, whose business careers have embraced numberless compensation cases of the most diverse character, and who have thus acquired the skill and experience which form the principal

basis on which a sound opinion can be founded. Without undue boasting, I may claim the good fortune to have been connected with important cases covering nearly every branch of the surveyor's and valuer's business, involving at times the consideration of most difficult problems before it was possible to form an opinion or arrive at a decision, the ulterior consequences of which must be carefully weighed. The labour and skill required to do justice to a client's case may not always be self-evident, but is generously acknowledged by all whose experience in these matters enables them to form a judgment thereon.

The subject of compensation, so far as it concerns the surveyor, is in most cases connected with land, including buildings, and the different values, present or future, which may attach to it consequent upon the different users to which it is or may be put. It is the duty of the valuer to consider it with all its potentialities—a wide range indeed—including its suitability for one or other of the numerous classes of dwelling-houses, or for commercial purposes, shops and offices, works, &c. Even in the case of moorlands, where values may at first sight appear insignificant, there are possibilities in connection with mines and minerals, shooting and other sporting rights, woods and timber, and last but not least, in connection with water collection and reservoirs, the acquisition of a pure water supply being one of the most important of the many problems requiring solution when the health of the great multitudes inhabiting this country comes under consideration.

In order to reduce the cost of public undertakings it has, within the period of my experience, become customary for the promoters to apply for the insertion of a clause in their Act of Parliament, limiting the area of land to

be taken to that which is actually required and, unless the utility of the remainder would be destroyed, leaving such remainder to be treated as injuriously affected. A clause is, however, I think invariably inserted in the Act to prevent the abuse of this power by allowing the person affected to refer the matter to the judgment of an arbitrator whose decision will finally settle whether the promoters are to take the whole or merely a part of the property in question.

A limit is also placed upon the extent of the undertaking by means of the plans, sections, and schedule, which have to be prepared when the promoters seek the consent of Parliament; this is shown by limits of deviation, beyond which all power to extend ceases. Indeed, even when a desirable divergence is the subject of an agreement with a landowner, it is, in my opinion, safer to obtain supplementary authority from Parliament to allow its being done.

All these matters tend to complicate the questions to be considered by a surveyor retained in any arbitration of importance, and call for the exercise of considerable ingenuity on his part; so much so that I have occasionally known the reasons given for adopting a certain valuation to have become almost too attenuated to afford a firm basis for a sound opinion.

Speaking, however, in all seriousness, my opinion is that the most honourable, and indeed the only honourable, course for a surveyor to adopt, on whichever side he may be acting, is for him to consider all such matters, not from the narrow view of a mere partizan, but from the wider range of an unbiassed party, favouring unduly neither claimant nor respondent. By advice thus given, I am confident that the interests of a client are best served, and I am equally convinced that a reputation

for consistency in so acting is the surest way for a surveyor to secure the confidence of the public and his own success.

Even the most astute and able surveyor must base his opinions upon prevailing conditions, and, with all his experience, cannot in every case foretell coming events and their possible consequences. Take, for instance, the extraordinary development referred to in the earlier portion of my address, but especially that which has taken place in the suburbs of most of our towns within the last few years, and consider the extent to which this must be attributed to mechanical and electrical inventions for the improvement of traction and communication. The innovations of to-day are the commonplaces of to-morrow, and possibly the next generation will wonder at the shortsightedness of the present in failing to anticipate developments even more astonishing than those which have been witnessed in our own day.

Passing now from the more general questions which I have discussed, I may perhaps be allowed to refer shortly to certain points which occur to me as of particular interest in the surveyor's practice.

It is well known that the riparian owners in a watershed have immemorial rights to the use of all water which has once found its way into a defined stream, but that until its course is thus defined, all rain or water falling on the surface of the watershed may become the property of any owner clever enough to use artificial or mechanical means to collect and impound it for his own use. This, however, is usually a costly process, and is not undertaken on a large scale unless the water (otherwise valueless) can be disposed of to some person or community in need of it. In practice, this is, as a rule, done

by a water committee or board obtaining parliamentary powers to take the water needed, a condition being commonly imposed requiring them to compensate the riparian owners by providing them with a regular supply equal to, say, one-third of the available water produced by the watershed. If this were properly done, no further compensation could successfully be claimed, unless perhaps it could be proved that the diminished flow of water down the stream would reduce the value of the fishing rights, in which event I think a case might stand against the promoters.

Naturally, there are, as in everything else, exceptions; as for example, where a landowner is sole owner, and can convey rights under or over his own land without infringing those of others, or where he can arrange for an easement with neighbouring landowners.

Underground waters present greater difficulties, but where undefined they follow the rule of surface waters, and become the property of the owner who sinks for them and pipes them away. In their case the cost of making them available for use is necessarily much less than where surface water has to be dealt with. When underground waters are allowed, as in the case of springs, to rise to the surface and permitted to form a defined channel, they will be lost to the owner; but if before they arrive at the surface they are collected and stored by him, their value will depend upon the probability of a demand within a reasonable time, coupled with the facility of delivery and the proximity of the community to be served.

These points must not be lost sight of in attempting to arrive at the value of water rights; nor must the question of demand, which—where the promoters do not possess statutory powers—is dependent upon the presence

or absence of other authorities or manufacturers who might become competing bidders.

In addition to considerations of water supply, the value attaching to uplands and moorlands may be influenced by such rights as fishing, shooting, turbary, and minerals, the amount of compensation for which depends in by far the greater measure on the demand existing at the moment or likely to arise in the immediate future. But the rent obtained must not be looked upon as conclusive evidence of value, for not infrequently an easy-going landlord lets some of those rights for a merely nominal sum. I have known, even in late years, when sporting rights have increased so greatly in value, a length of fishing worth from its position £100 a year, let for the nominal sum of £10 on a yearly tenancy, and similar lettings in the case of shootings and turbaries. Obviously rents so much under the true value should not be allowed to penalize the owner when the time comes for them to be compulsorily wrested from him, although the other side will in all probability make use of them to depreciate values and decline to take into consideration the possibilities of the future.

You will see that I have not touched upon the final test as to the accuracy of the views which present themselves to a surveyor when considering the numerous items which it is his duty to collate into a sound and logical whole. I mean the legal test, and, although experience of certain decided cases will usually enable one to steer clear of the impossible, I think it wisest not to depend too confidently on one's own opinion in legal matters, but to trust those more competent to keep one from wandering out of the right way. Still at times, even with the best intentions and with an apparently well-digested case to guide one, misfortune may possibly arise.

I remember a case where an authority, acting under statutory powers, collected, by means of pipes laid underground in a trench afterwards covered up, water flowing from numerous springs, before it arrived at the surface of the land. It was shown that all the water taken might eventually have been profitably employed on a part of the claimant's estate—then in course of development—and an award in his favour was made by one of the most experienced legal gentlemen of the day. In this case there was no appeal to the Courts. The authority complied with the award without demur, and consequently the question of its soundness did not become the subject of a legal decision.

In another case, similar in all respects except that the competition for the water was more remote, a like award was given, which, on application being made to the Court, was remitted to the arbitrator for reconsideration on the ground that the amount of the permanent damage to the estate was not specifically claimed. Indeed, it would be a difficult matter to estimate such damage with any exactitude, for it must depend, first, on the quantity and value of the water abstracted from the underground flow, and, secondly, on the depreciation in the value of the estate owing to its being left outside the available areas of water supply, which are naturally becoming limited in number owing to the increasing needs of our populous centres. The court remitted the award, and an appeal against this decision was upheld.

Other compensation cases, equally difficult to deal with, are those affecting foreshores, nearly all of which differ one from the other in a greater or less degree, while each case has points peculiar to itself. Some of the principal points which the surveyor has to con-

sider in attempting to value the various interests are as follows, viz. :—

The minimum depth at low water during spring tides; the extent of the foreshore, that is, the horizontal distance between high and low water at spring tides, which necessarily depends upon the steepness of the shore; the stability of the ground, whether clay covered with shingle, sand, or rock; the strength or speed of the tides; the exposure or otherwise to the open sea, and whether protection is afforded or not by outside banks intersected by deep water channels. Before any conclusions as to value are arrived at, these matters all require full and careful consideration. The River Mersey affords a good illustration of the necessity for this. The foreshores of old Liverpool were narrow and confined, whereas, especially in the northern parts of the river, or fronting Bootle and Kirkdale, they were flat and of great width. The solid red sandstone of which the former were composed presented an excellent foundation for the enclosing river walls which have withstood up to the present the fierce and strong tides flowing past them; a severe test, for under favourable conditions of wind and tide a speed of seven knots an hour is attained by the stream as it rushes through the narrow channel three-quarters of a mile wide between Seacombe and Liverpool.

The northern part, on the other hand, has a softer bottom of sand, clay, &c., superimposed to a considerable depth on the underlying rock, which necessitated efficient piling before it could afford a suitable foundation for river walls and modern docks. Notwithstanding this disability, the great extent of the foreshore between high and low water mark, enabling docks and quays to be constructed with sufficient space round them for railway and cartage approaches, made it of immense value.

Such details must ever be present in the mind of the surveyor endeavouring to arrive at a sound opinion as to value, but the most momentous and vital factor is the importance of the port itself, gauged by the accommodation required by the shipping frequenting it. This will be largely governed by the importance of the industries in the surrounding districts and by the magnitude of their need for a cheap import of raw material and a ready export of manufactured goods. My own experience of the values of the foreshore of the Mersey extends from sales of two acres to 400 acres, ranging from £10 to £600 per acre, prices which depended to a greater or less degree on the varying conditions which I have enumerated.

Many will remember the arbitration case in connection with the acquisition by the Government of the Maplin Sands at Shoeburyness for a gun range. The claim was made on the basis of the fitness of sands for the deposit of London refuse. They contained in all about 14,000 acres, 6,000 of which were required, and being very flat the shore was well suited for the deposit, its width between high and low water mark being 3 to 3½ miles, and it being well protected by outer sand banks. The Crown claimed that, except for anchorage and fishing rights, there was practically no annual, and consequently no capital, value. The arbitrator awarded £5 per acre, the claim being £15.

Another important case occurred at Heysham, near Morecombe, where the Midland Railway Company proposed to construct a new port. This case presented many points of interest as there was but little foreshore; a deep channel in front protected at low water by a large outside bank extending well into Morecombe Bay; good anchorage, but cliffs rising to 40 feet above high

water and consequently no harbour nor creek, and except for the above-mentioned bank, no protection against heavy seas, and no wind protection at all. The prospective buyer was a great railway company, but there was no rival in the market, competition with whom might set up a standard of value.

A claim of £100 per acre was made; the railway company's evidence assessed the value at £10, and the award was £25 per acre.

A number of other cases have occurred lately at Hull, Swansea, Barry Docks, Llanelly, and the Bristol Channel, in all of which the amount of compensation depended upon similar factors, and ranged from £25 to £150 per acre. In none did annual rental form a basis for the calculations of either claimants or promoters.

Although rating is a somewhat different subject from that on which I have been addressing you, still, the valuations on which are based the endeavours of the different parties to substantiate their views so closely resemble those which govern compensations, that I venture to ask your indulgence if I refer to it as illustrating one of the difficulties that we, as surveyors, have to contend with in attempting to prove our facts.

Many years ago I was engaged in a very important railway rating case, in which, for the first time, was raised the question of the rateability of a certain class of lines at a station, viz.: not those which run right through and belong incontestibly to the main system, having allotted platforms for incoming and outgoing passengers, but those which are used sometimes for through traffic when the main lines are occupied or likely to be occupied, at other times for carrying goods to warehouses or wharves adjoining the station, and again

at others for standing trucks on or for the making up and departure of local trains.

After a very strenuous contest, the sole arbitrator, a legal gentleman of the highest standing, refused to entertain the proposition that such lines were other than ordinary sidings, and as such, to be rated by the parish in which they were situate.

Notwithstanding this rebuff, the question was again raised a few years later before an equally experienced barrister, and, much to my disappointment, with the same result.

An opportunity, however, again presented itself, and for a third time an attempt was made to persuade the tribunal that such lines belonged to the running lines and not to ordinary station sidings, and that they should be treated on the same principle as the main lines and rated indirectly, not directly as had hitherto been the custom. On this occasion, known as the Stockport case, our contention was established, and the principle was afterwards substantiated on appeal.

I have referred to this case in order to show our younger Members that what has become the custom need not be blindly followed, provided that well considered and reasoned arguments to the contrary can be put forward, and to demonstrate the importance of patience in an endeavour to prove, in the face of opposition, the soundness of a contention based on principles of equity.

In the three cases I have referred to, the important point was that main lines were rated on receipts and expenses as a going concern. All the other lines were dealt with separately until the Fletton case established the fact that, although there were a number of through lines, connected at both ends with ordinary running lines, over which the goods traffic passed, thus relieving

the passenger main lines, these were not to be treated as ordinary sidings as the local authority contended, but as main lines and rated accordingly, and that the number of these subsidiary lines made no difference in the rating. For it could not be denied that the *raison d'être* of these lines was merely to assist in the carriage of goods from their starting point to their destination. I believe this was the origin of the contention finally established in the Stockport case as to the proper method of rating the subsidiary lines at a station.

The rating of plant, fixed machinery, and power is a kindred subject. All surveyors recognise that the two latter, being part of the freehold by permanent fixture, must be treated as equally rateable with it. Plant, on the other hand, presents greater difficulties, for the position in which it is placed by a recent decision is so ambiguous as to afford wide room for considerable differences of opinion as to its effect upon the rateable value of the premises containing it. According to this decision the presence in a building of plant suitable for the purposes for which the premises are occupied, will enhance their value for rating purposes, although the additional value need not necessarily be calculated by a percentage on the value of the machinery or in other usual manner, but must apparently depend upon the mere *ipse dixit* of the tribunal deciding the question. As the law now stands, plant in a factory and used therewith, whether fixed to the freehold or not, may be taken into consideration as increasing the assessable value of the factory to the poor rate, but no principle has been laid down for the guidance of the surveyor in arriving at the amount of such enhanced value.

In a recent case in which I was engaged, it was admitted that the plant and power cost £30,000, of

which £4,000 was attributable to the latter item. The value of the land, buildings, fixed plant and power, was practically agreed to by both parties, and the only question really to be decided was the additional value to the premises due to the presence of the tenant's plant. The rateable value would amount to £3,920 if the respondent's claim proved correct, or £2,950 if the decision went in favour of the appellant. As the appeal was in the respondent's favour, it meant an addition to the rental value of the premises of nearly five per cent. on the cost of the tenant's plant, a result which did not accord with that in *Kirby v. the Hunslet Union*, for in the one case apparently the extra annual value conferred by the tenant's plant was based on half the net annual value of the plant, and in the other on the whole.

It may be assumed that both judgments were correct both in principle and in method, but I find a difficulty in attempting to arrive at the extra value given to premises by the presence of tenant's plant, viz., whether a part only or the whole should be assessed. For in my opinion the increased annual value given to premises by the presence of plant should be based on some better defined principle than appears to have governed the decision of the Courts in the above two cases. In the one case, the additional value attributed to the plant was, taking cost as our guide, double that in the other. If the capital value of the plant or any percentage thereof is not to be considered, it would seem almost inconceivably difficult to lay down any exact principle on which to calculate the additional value given to premises by the presence and user of plant, which we all agree increases the net annual rental value. Un-

fortunately, no standard exists by which such additional value can be assessed, and any opinion thereon can only be based on the common sense—which may be more or less sound—of the valuer, if he may not take into consideration the capital value of the plant.

In fact I feel sure that even the occupier himself could not state any exact basis on which to calculate the extra rent he is willing to give for such premises. Whatever sum he might mention would be founded simply on guess work.

My own experience is that the methods of arriving at and deciding the compensation proper in different cases are quite kaliedoscopic in their variety. The facts are, as a rule, obtainable equally by either side, but in their manipulation the variety of thought brought to bear upon them is almost endless, and it is an interesting fact, which I have often noticed, that in almost every case some new and unexpected phase has arisen to arrest attention and need consideration.

To ignorance on this point must, I think, be attributed the charge underlying the correspondence on surveyors' evidence which appeared in the press early in the present year. I do not propose to refer in detail to the many causes which may give rise to differences of opinion as to value. Several of those who took part in the correspondence enlarged upon them more convincingly and logically than I could hope to do. But as President of this great Institution I feel that it behoves me to state publicly that my experience, now extending over 35 years of contentious professional work in compensation cases, is altogether opposed to the validity of the grave charge which was somewhat promiscuously

directed against the profession, viz.:—that surveyors are accustomed wilfully to distort and magnify their valuation if acting on behalf of a claimant in a disputed case, or to minimise and reduce it if acting for the other side.

My practice has brought me into contact with surveyors of every class and from every part of the kingdom, some of the widest experience, and others on the very threshold of their career. I have found great difference of opinion among them, and not only among those opposed to each other, but among those acting together. But I can confidently say that I have never had the misfortune to meet with a surveyor who would deliberately put forward a valuation contrary to his considered opinion, or who would be influenced to magnify or minimise its amount unless in deference to counsel's opinion on some legal point.

Further, in my official position as your President, I feel constrained to say that, were a Member of this Institution found guilty of such practices, the Council would be prepared to deal with him under the by-laws, which specially provide for the severe treatment of those guilty of unprofessional or dishonest acts. It was, I think, unfortunate that the originator of the correspondence did not formulate a specific charge instead of confining himself to generalities.

On more than one occasion it has been my great pleasure to hear our honoured Associate of Council, the Lord Chief Justice, refer in terms of the highest admiration to the judicial qualities exhibited by many old Members of The Institution. Their names will always be honoured within these walls; and, gentlemen, I am happy to believe that the code of honour set up by them

in the days of our infancy will not be tarnished by those whose duty and pleasure it is to carry on the traditions of an honourable past.

Mr. DANIEL WATNEY (Past-President) said it gave him very great pleasure to propose a hearty vote of thanks to his old friend the President for his able Address. He had pointed to the fact that this was the first time that a President of The Institution had been chosen from the northern counties; but if the result were such able Papers as that to which the Meeting had just listened, he was sure The Institution would be proud to welcome other Presidents from the north of England.

It was understood that at the opening Meeting Members must not criticise anything that the President had said in his Address; but he did not feel he would be breaking this rule in saying that he had never heard a more lucid exposition of the law of compensation. He had been engaged in many cases to which the President had referred, notably those of the *Duke's Dock*, *Liverpool*, and the "*Maplin Sands*," and he found in the Address not only a reference to the cases themselves, but a most useful summary of the results.

He had every confidence in asking the Members present to pass a most cordial vote of thanks to the President for his Address.

Mr. W. E. MILLS (Fellow) said he was pleased to have the opportunity of seconding the vote of thanks proposed by his friend Mr. Watney. His own practice in the north

of England had brought him into intimate contact with the President for many years. It therefore afforded him much gratification on the present occasion to be the means of seconding what he felt sure would be a unanimous and very hearty expression of thanks for his able Opening Address.

As Mr. Watney had said, the rule that speakers must not criticise the President's Address was a well-established one, and one which ought to be observed, but he felt he was not transgressing that rule when he joined with Mr. Watney in expressing the opinion that the Address comprised a very lucid exposition of the law of compensation. He was especially glad that the President had chosen this subject, for he thought the question of compensation entered perhaps more largely than any other into the practice of surveyors, except perhaps in the case of those few who specialised on a particular subject. Many were almost entirely occupied with questions of compensation, one way or another, and the President had touched on various special aspects of the question in a manner which he was quite sure would make his Address a very valuable addition to the *Transactions*.

He was especially glad to hear the President's caution (should he call it?) to the younger members, because Mr. Wainwright's modesty did not allow him to refer to the well-known great kindness and consideration which he showed to the younger members of the profession. He spoke from personal experience when he said that there was no one—especially no young surveyor entering on his profession—who had gone to the President for advice, and had not received from him the greatest kindness and assistance. It was invaluable to

a young professional man to be able to go to so experienced a member and receive from him, as had always been the case, the assistance and advice he needed.

He would not detain the Meeting further, but would ask for a very hearty response to the vote of thanks which he had the pleasure of seconding.

The vote of thanks having been put to the Meeting and carried unanimously,

The PRESIDENT, in reply, said that if his efforts had met with the approval of the Members, that was sufficient repayment to him for any trouble and labour he had expended. It was always a pleasure to him to deal with such matters, which were of the greatest interest to him. His only fear was whether his voice, which was not strong, would enable him to make himself clear to all present at the Meeting.

He was much obliged to his old friend Mr. Watney for his kindly allusions to the Address, and still more to his friend Mr. Mills for his remarks, though his commendations came, he feared, rather near to flattery. He did not, however, hesitate to say that he had never yet (and the reason he mentioned it was that he thought it the right course to follow) refused his assistance to any one who had come to him for advice, whether high or low, rich or poor, capable or otherwise. He had even gone so far as to tell a man on one side the way he himself would view the matter were he acting on the other side. He thought it was hardly possible to carry advice

much further than that. He was sure the Members would accept his cordial thanks for their reception of his Address, and he trusted that at the end of his term of office he would be able to deliver up his charge to a successor who would assume it in the same friendly spirit that now existed, and would foster that strong desire for each other's good which now, he hoped, animated the Members of The Institution.

The Meeting then adjourned.

AT
THE ORDINARY GENERAL MEETING,

Held on Monday, 25th November, 1907.

THOS. TAYLOR WAINWRIGHT (President) in the Chair.

The adjourned discussion on the Paper read at the Ordinary General Meeting on February 25th, 1907, by Aubrey J. Spencer (Barrister-at-Law), entitled "The "Agricultural Holdings Act, 1906," was resumed by

Mr. J. H. SABIN (Professional Associate of Council) who said that, before resuming the discussion on the Act, he would like personally to express his gratitude to Mr. Aubrey Spencer for his excellent analysis of its provisions.

He took it that the object of the discussion was not to seek for flaws in the Act, or to suggest difficulties in carrying it out. To quote a remark of the witty, and sometimes wise, author of *The Chronicles of a Clay Farm*, which he thought might have some apposite connection with the Act: "Thank heaven, the worst "laws are modified, in practice, by the common sense of "mankind, as the best are sometimes evaded by its "ingenuity." He did not suggest that any landlord would try to evade the provisions of the Agricultural Holdings Act, but he believed that in carrying it out

there would be ample scope for the exercise of the quality of common sense.

There were in the Act, constantly recurring, such phrases as "as soon as may be," and "reasonable," and so on. In Section 2 the words "As soon as may be" were used in reference to the "observation" which a tenant was to exercise in respect of damage done by game—an expression not definable by any known practice on the part of tenants—and all depended on the different notions of what "soon" might mean and "observation" might imply; while, as a set-off, the next line raised the question what might be a "reasonable opportunity given to "the landlord to inspect the damage." Possibly what might be observed by one man might not be by another. What a landlord might consider reasonable, a tenant or a court of law would consider unusual.

He thought, therefore, if the landlord wished to avoid risks he must allow the tenant as much latitude as possible in making his claim, and if he were a wise man he would take care the inspection of damage on his behalf was made immediately he had notice of it.

Personally he was not much interested in the game sections, for on most of the estates which he managed the game was the property of the tenants.

He might say, in passing, that he feared some tenants would be greatly disappointed when they realised that, while they had an immediate statutory remedy against their own landlords, they would have no remedy against other adjoining game preservers, especially with regard to rabbits.

In Section 3 there was the same phrase "as soon as "may be" applied to a provision for protection from injury or deterioration by sale of produce, with the addition of the qualification "suitable and adequate."

That whole provision, so expressed, gave ample opportunity to those to whom such disputes might be referred, for the exercise of the common sense which he thought distinguished English tenant-right valuers and enabled them to dispose of many questions which would otherwise find their way into the courts.

To go back to Section 1 of the Act. Mr. Spencer set out the important difference between what *was*, and what *might be*, included in an award, namely, that all claims, whether under the Act or under a contract for tenancy, should be so included, and inferentially claims under the custom of the country.

But returning to Section 3, in some parts of the country two years' notice was required. In such cases the tenant would be debarred from exercising his right of cropping or selling for two years instead of one. He had wondered whether the general application of this custom would be to the advantage of the landlord or not. It occurred to him it would give two years' control of the cropping instead of one. Of course there would be some risk when the tenant was a known "land-skinner," for it would give him two years instead of one in which to strip the farm; but he thought, on the whole, it would be an advantage to have two years in which to return the farm to a proper rotation.

Section 4 was most important as the first step, for better or worse, towards fixity of tenure, for it limited in definite terms the right of the landlord to dismiss the tenant. He could do so only for a cause both "good and sufficient," but no information was given as to what constituted a good or sufficient cause.

He was afraid that under this section many difficulties might arise, for what might be "good" might turn out not to be "sufficient," and what might be "sufficient" in the eyes of a landlord might not be "good" in the eyes of a Judge.

What was the value of the comma after "cause"? One would have supposed it to be unnecessary, as the conjunctive appeared to be absolute. If so, the good and sufficient cause must be something having relation to good estate management. Would not the amalgamation of farms—the addition of grass to arable—a re-division of grass and any other of the many methods by which estates were readjusted after sales or purchases, all be consistent with good estate management? Would these be good and sufficient causes for disturbing a tenant?

Then what were the leading features of good estate management, the neglect of which might justify a notice to quit? So far as the tenant himself was concerned he should put among them a clean farm, and an adequate rent promptly paid, while from the landlord's point of view there should be on a mixed estate a proper proportion of land under different forms of cultivation. Also he should not be denied opportunities of developing the building and mineral resources of the land.

A notice, in order to raise the rent on improvements created by the tenant, would not, as Mr. Aubrey Spencer had pointed out, be a good and sufficient reason although consistent with good estate management, if monetary considerations alone prevailed; but an increase of rent justified by a rise in prices which raised the letting value of other similar land would certainly be consistent with good estate management, and therefore, he thought, should be justified as a good and sufficient cause, having that object in view.

The improvements which barred an increase—and this, he suggested, was somewhat important—were those for which the Act gave compensation; not merely the raising of the condition of the land, the equivalent compensation for which the tenant might have received in dilapidations from the outgoing tenant or from the landlord on his entry. He assumed that no improve-

ments executed outside the Act, or for which the Act did not give compensation, would be improvements which could be said to be effected at the tenant's expense.

But would delay in payment and neglect of cultivation be good and sufficient cause for notice? It had been suggested by Mr. Aubrey Spencer that getting rid of bad tenants would be consistent with good estate management, and there he thought all would agree with him.

But what was a bad tenant? If that description included irregular payers and untidy farmers, then he saw in the Act a useful instrument for securing prompt payment and better cultivation; but he also feared it was exactly that class of tenant who would be likely to claim compensation for disturbance. From a landlord's point of view it would generally be bad management to have a farm underlet for any length of time, while it might be good management in special cases to allow time for payment and permit a good tenant to sit at a low rent rather than to increase it on the first opportunity if a permanent improvement in prices justified it.

Take the possible case of a farm relet at an increased rent on an ordinary change of tenancy. Surely it would be inconsistent with good estate management to allow other tenants to sit at a lower price than the farm just let, those rents having been fixed under circumstances in which they had the whip-hand. That was the case with regard to many sitting tenants who took their holdings when farms were more plentiful than tenants; whereas now, as a rule, tenants were more plentiful than farms. But notices under such circumstances would, no doubt, be looked on with great suspicion and a number of them would raise public comment.

The Act, he thought, gave a splendid opportunity

for the exercise of a common sense interpretation ; but was this to be before a judge, with legal gentlemen to decide what was common or what was particular sense, or could it be settled without their intervention ? His opinion was that in the majority of cases the latter would be the rule.

But suppose a dispute ; there was in the same section, another opportunity for sweet reasonableness, for the landlord was to have a "reasonable opportunity" of making a valuation of the goods, implements, produce and stock. In some cases of Michaelmas entries the sale of stock took place in the spring, and the grass-keeping being let it followed that the tenant could not claim compensation under that head unless he gave the landlord an opportunity of valuing the stock to be sold, *i.e.* he must give him notice of the sale. Should the sale be a bad one, would the landlord be liable for the difference between the price which the tenant got and the return he would have obtained had stock been summer-fed and sold in the usual way ? At any rate it would be necessary for the landlord to keep such sales in view.

It seemed to him somewhat hard that in all cases death should bar compensation under this section.

Again, in Section 6 there was another invitation to reason. Damage might be done by storm and the tenant would probably think immediate attention was necessary, and for the landlord's own protection it was usually given at once ; but who was to be the interpreter of this ? Who was to be responsible ? Repairs not executed by the landlord would become improvements to be paid for under the Act. The measure of value of improvements under the general Acts was their value to an incoming tenant. What would be the value of repairs executed years before and exhausted ? The tenant could

not book them as an unexhausted improvement, and the incomer would derive no benefit.

It seemed to him that the proper remedy would be to give the tenant power to deduct the cost of the repairs for which the landlord could be held to be liable from his next rent payment.

He had not sought to find who was responsible for the introduction of those controlling words; but he ventured to say, having regard to the number of contracts existing, to the periods over which some of them had extended, and to the many opportunities that might arise for captious insistence on the literal fulfilment of obligations into which tenants entered, it was remarkable how few cases came before the courts for settlement. The number might possibly be increased under the new Act.

Then as to the arbitration clauses. Who was to settle the questions of reasonableness and of compensation? The landlord and tenant personally, if they chose; but if they did not choose, then the settlement was to be left to agents, who were not to be called arbitrators. His impression was that it would be well not to designate the intermediaries "valuers," but simply for the respective parties to appoint agents to settle their differences. The difficulty arose on the landlord's side, for while the outgoing tenant had only himself to account to, the landlord had to account to the incoming tenant whose interests he was bound to safeguard. So it was necessary that a disinterested person should be appointed.

His own practice was to ascertain whom the incomer proposed to employ, and if satisfied with the nomination, to simply authorise the nominee to act as far as might be necessary on the landlord's behalf, requiring that the

amount awarded for foul condition or other matters affecting the landlord should be stated. It was not often that one got anything on that account, but he had been successful on a few occasions. That was not asking for details, and would not, he hoped, lay the landlord open to Mr. Eve's penalty of double fees.

The fact that agents might be appointed did not make such agents arbitrators nor the proceedings an arbitration till they became witnesses. Assuming that the valuing agents agreed, was their valuation an award? Frankly, it did not appear to him that it need be called an award, or that it need be stamped as one.

An element of mystery seemed to envelop the business of farm transfers which was not found in other businesses. If a grocer had a business to sell he would have no difficulty in taking stock of what he had to dispose of, nor would the purchaser have any difficulty in pricing the sugar and tea, although as a matter of convenience trade valuers were, to the advantage of their profession, employed. But immediately one tackled fallows and manures, the incompetence of two practical men to manage their own business became apparent, and the certainty that they would differ was assumed. If those notions could be abandoned it would be realised that a single arbitrator would answer the purpose. In most instances there was less a question of opinion or of law than of fact, but, seeing the semi-fiduciary position in which the landlord was placed, it seemed necessary that he should have a valuing agent for himself and the incomer.

With regard to the matters of an award, it was imperative that the arbitrator should state certain details, because part of the valuation would probably have to be paid by the landlord and part by the incoming

“tenant. There should be sufficient details given, but
“the Act did not state that all details must be given.
“In most cases he was a foolish man who asked for
“details—‘Where ignorance is bliss ’tis folly to be
“wise.’”

With regard to Section 5 (the Market Gardens section), he would say that whatever the opinion might be as to the propriety of making compensation retrospective, it was intended to be so made by the 1897 Act. Some seats on the opposition side of the House were saved by a pledge to secure such compensation. The present Statute expressly aimed to secure it, and if it did not, he had no doubt that another amending Act would put it beyond dispute. He saw no good therefore in objecting to it. It was only in a few cases that a claim of any extent could arise, and he did not think it necessary to trouble about the legal conundrums which Mr. Aubrey Spencer had so ingeniously set for solution.

Mr. ALFRED AMOS (Visitor) said that he was glad to find from the general tone of the discussions on Mr. Spencer’s Paper that there was a much better feeling towards tenant farmers than there appeared to have been formerly. The new Agricultural Holdings Act would, he thought, help all farmers who wanted to farm well and were anxious to put money into the land, and in the long run would be believed to be as great a benefit to the landlords as to the tenants.

He thought that Mr. Spencer in his Paper gave some very good advice to land agents, but the land agents hardly needed it, for they were, as a body, quite capable of taking care of themselves.

The first section of the Act gave the tenant on quitting his holding such sum as represented the value of his

improvements to an incoming tenant, with which he was quite satisfied. But tenant farmers occasionally found on the termination of a tenancy that if they re-hired they were made to pay rent on their own improvements. If the landlord wanted to raise his rent he thought he should first settle up with the tenant for improvements.

Section 2 provided for a single arbitrator, and as a tenant farmer, he thought that it was a great benefit to be able to appeal to an impartial person to settle the valuation. What would happen in most cases would be that the tenant would appoint one valuer to prepare his valuation and the landlord would appoint another, in the hope that they would agree; but if they did not, then there was an appeal to the Board of Agriculture to appoint an impartial man. Neither of the valuers would know during their negotiations who that man would be, and they were therefore more likely to settle without calling him in.

It was a well-known practice for the one valuer to send to the other five names from which to choose one. But there were valuers and valuers. He had known cases where a valuer put down five names from which he knew it would be very difficult for the other to select one favourable to himself. This was possibly not often done, but it had been done, and the appointment of an arbitrator by the Board of Agriculture would make a change which would be satisfactory to all parties. He believed that the Board of Agriculture would endeavour to pick out the best men, thoroughly competent to do their work.

He thought it a pity that the tenant had not the right to appeal, not only on the question of valuation, but also on the question of rent or notice to quit. He

should certainly have a right to appeal against any unfairness.

Section 2 was very good where the game was preserved by the landlord. Speaking from experience, he would say that tenants did not object to their landlords preserving game and having good sport, but there were shooting tenants who did not care a straw for anyone, and only thought of the number of head of game they could shoot in a day, and in many such cases there was no endeavour to maintain a good feeling. There were, of course, good game tenants and instances where things went well, but it was in the bad cases that this section would provide for justice.

Section 3 was a very valuable one to the tenant farmers, who would have welcomed it at any time during the last 25 years. They wanted to be able to adapt themselves to circumstances. When corn used to pay for growing, many leases and agreements said the tenant must not grow more than two white straws in succession, and so on, and must not sell off this or that; but "sell all you can" and grow all you can" was better for both the landowner and the tenant, provided the fertility was maintained.

It was a mistake to suppose that one could not get much out of the land without impoverishing it. The more a man put into it the more he would get out of it. If an agent understood his business he would see that the tenant did not decrease the value of the farm or go on injuring it.

Section 4 was, he thought, a real benefit to a good tenant, but it did not go far enough. He thought there was only one reason (or perhaps two) that could be called sufficient for giving a tenant notice to quit under good estate management. One was bad farming and the other non-payment of rent.

He maintained that on being compelled to quit for any other reason a tenant was entitled to compensation for disturbance. He took his farm and considered when he went into it that as long as he farmed properly and paid his rent he was as good as settled there for life, and he thought that to deprive him of his holding would be to do him a great injury. It might be that landlords would have to pay more than they had hitherto done ; but at the same time was it fair not to pay the tenant compensation for an injury to his business for which he was in no way to blame ? The last speaker had asked what should be considered good estate management, and had referred to taking land from a tenant for building purposes. One would think that if a landlord had a man ready to give him a good price for land for building purposes he would naturally give the tenant compensation for his loss. He could hardly expect to take away a useful part of a farm without some compensation for disturbance.

The section dealing with compensation for disturbance did not to his mind go nearly far enough. The tenant was only to be compensated for the cost of removing his household furniture, farming stock, &c., but he would incur a very much greater cost in getting a new farm into order. For instance, if a farmer worked up a milk business near a town, and was not able to get a suitable farm to carry on the same business, surely the incoming tenant or the landlord should pay him something for goodwill.

He had changed farms, and he might say that it took him three years' income to get himself established in the new business, and he did not believe that anyone could move from one farm to another for much less. The Act should have provided compensation for remov-

ing from one business to another, unless the tenant had been disturbed owing to non-payment of rent or bad farming. Then, of course, he should not be paid anything—in fact he ought to compensate the landlord.

The Act said that notice must be given of a claim for disturbance. He thought that it should be taken for granted if it were not for the reasons he had mentioned. Then again the Act said that if a tenant died within three months before the date of the notice to quit, the landlord should not have to pay any compensation to the widow or family. That was what it meant, though it was not stated in so many words. That seemed hardly fair, for he thought the widow and family should be compensated as much as the husband would have been if he had continued to live.

With regard to market garden farms, of course it was rather late in the day to do now what the Act provided. A great many market gardeners had given up their farms and lost compensation; but as the Market Gardeners' Act had done much for market gardeners, so he believed the Agricultural Holdings Act would benefit the tenant farmers.

Section 6 referred to repairs to buildings. How that section found a place in the Act he did not know, for to him it seemed ridiculous. In the case of repairs to the buildings which the landlord had agreed to do, the tenant should be allowed to do them and deduct the amount from the next half-year's rent. In many cases the landlord would say that the Act gave compensation and power to do them, and that the tenant might as well do them all, and so the cost would be thrown on the tenant. If the landlord did not do the repairs he agreed to do, he ought to be made to do them.

Section 7 provided that a record of the holding

should be taken on entry, which he thought was a very good arrangement. He wished he had a record of his farm taken when he went into it, but it would be a very different thing from a record taken now. He thought every good farmer who was worth his salt would have a record taken when he went in. He did not believe a record of a farm need be the expensive business that some thought. A shilling an acre on the average would be a fair cost; for instance, for 300 acres £15 would not be unreasonable, and would pay well for the trouble involved.

He regretted that the Act had not come into force last January, for he was sorry to say several notices to quit had been given in his neighbourhood, some of which he thought were unfair. He hoped that had not been general.

Altogether he thought the Act a good Act, and although it did not go nearly so far as he should have liked, he believed it would give encouragement to tenants to put more money into their farms than hitherto.

At the last Meeting, Mr. Cobb had asked what was good estate management, and he spoke of cutting up a farm and selling it in pieces and calling on the purchasers to pay the tenant compensation for disturbance. He should think that if a landlord took land from his tenant, to cut up and sell in plots, the first thing he would do would be to tell the tenant what he intended, and to settle compensation with him so that he could sell the land free of any charges. Mr. Herbert Smith spoke of a partnership existing between landlord and tenant, but he could hardly admit that in his own case, where he was providing four-fifths of the outlay.

Referring to the inherent capabilities of the soil, Mr.

Allsebrook said that he had "always looked upon the " inherent capabilities of the soil as meaning that which " the land was able to produce unaided by artificial " means." That was one way of describing it; but after the land had produced such increase, whose property was it? Surely it should be the tenant's who had paid for the use of the land, for if the result of the inherent capabilities of the soil were to be the landlord's he was going to have both rent and produce. He held that when the tenant had paid his rent his landlord had no claim whatever on the produce beyond the manurial value sold off.

It was said by Mr. Aubrey Spencer that some standard of cultivation must be laid down. With that he agreed. That standard of cultivation he imagined was the record of the farm when a man went into it. If he let the land down he should pay what it would cost to bring it up to that standard. He thought that would give both landlord and tenant all they were entitled to, and if tenants were kept up to the mark they would not be able to let their farms down. Bad tenants were a perfect nuisance. It must not be thought that the farmers wished to encourage bad farming, or believed that any one could benefit by it, for the neighbouring tenants, who tried to farm regularly and well, were the first to suffer from the foul land and the neglected conditions of the farm held by a careless or ignorant farmer. No bad farmer had been an advocate for the new Agricultural Holdings Act; it had been those who farmed best who wanted it most.

Mr. W. B. CANNING (Fellow) said that Section 1 seemed to leave matters much as they were before. Two valuers were appointed, one by either side, and

they, if unable to agree, applied to the Board of Agriculture to appoint an arbitrator.

He was surprised to hear Mr. Herbert Smith say, at the last Meeting, that he had never had a claim made under the Agricultural Holdings Act, though he had to do with large areas of land. He could only suppose that in his agreements there were clauses setting out the compensation that would be due to a tenant on quitting. Otherwise he thought he would have had many claims.

Under Section 2 (game damage) he did not anticipate many claims, excepting possibly in the case of tenants occupying land surrounded by woodlands where many pheasants were raised. In Somersetshire and Devonshire there might be claims for injury by deer, and the question came up who was responsible, as the animals were generally wild. He had known of cases in Somersetshire where land had been laid down to grass because the deer did so much damage to the growing crops. He thought that if a landlord made an allowance in the rent at the commencement of the tenancy of, say, £20 or £30 per annum, according to the rent paid, he would very likely have no claim against him afterwards. One owner of property had made that suggestion to him, and said he did it in his own case. A speaker at the last Meeting suggested that a tenant would then make a claim annually, but there would be no need to make a claim until the damage exceeded that amount. If a tenant made a fictitious claim he thought he should pay the costs if the award did not give him what he claimed.

With regard to Section 3, there had in his district been very few notices given owing to the Act. In most cases the agreement provided that the tenant should

farm under the three, four, or five course system, as the case might be, according to the character of the soil.

The last speaker, who was evidently a good farmer, had suggested that a statement or record should be made at the beginning of the tenancy of the condition of the farm. This could not always be done, and it was therefore desirable to have clauses in the agreement setting forth the rotation of cropping. Where a tenant took advantage of the Act and farmed as he liked by cross cropping, &c., it was impossible for him to give up his farm at the end of his tenancy (if subject to one year's notice or even to two years' notice) in proper rotation. The Act in that way protected the landlord as much as it did the tenant.

He had been rather exercised in his mind as to what would occur in the case of giving a tenant notice to quit, should an increase of rent be deemed advisable.

In his district, where there were many poor arable farms, land had been let at very low rents owing to agricultural depression. Now it was hoped that there might be seen a silver lining to the dark cloud that had overshadowed agriculture, and that the better prices now paid might foretell better times. If such proved to be the case, it seemed to him that the landlord should be able to reap some benefit from the increase in prices; but if he served a notice, the tenant might say that the increase of rent was owing to his good farming, and that therefore the landlord must compensate him. When agricultural depression was at its worst and there was much difficulty in letting land, some owners of property adopted the system of letting farms at a certain rent governed by the Imperial average prices of wheat, barley, and oats, as published on the 1st January in each year. If the united average of the three cereals

exceeded a certain sum, the tenant's rent would be proportionately increased from the preceding Michaelmas. That was found to work well, and in a few instances an increased rent was now paid. Of course it could not be adopted everywhere, as in many cases farms consisted more of pasture than arable land, and it was not easy to get any basis for such an arrangement in the case of the price of cattle and sheep.

One or two speakers had suggested that The Surveyors' Institution should agree on a scale of compensation, to be paid on the quittal of farms, for the loss of manurial value of hay and straw sold off. Generally, he thought the local Valuers' Association, and in some instances the Provincial Committees of The Surveyors' Institution, had agreed upon such a scale; but where they had not done so, that framed by the Central Chamber of Agriculture had been the one that in his district they had usually worked upon, and had always found satisfactory.

With regard to repairs in Section 6, it had been suggested that if these had been carried out by the tenant the incomer would have to recoup him for the value of the repairs. He thought that in most cases the landlord did the repairs. Though sometimes the tenant found all or part of the labour, as the case might be. If a tenant did repairs owing to the landlord's refusal to do so, he thought the landlord would have to compensate him at the expiration of the tenancy, and if they were not done the tenant should look to the landlord for compensation for the improvements and not to the incoming tenant, who might be a man of straw.

Mr. P. F. TUCKETT (Fellow) said the Act had been so fully discussed at previous Meetings that there was

little left to say, but one or two points occurred to him, which he would like to mention.

With regard to Section 1, he was not himself altogether happy about the omission of all reference to "the inherent capabilities of the soil." It was, he knew, difficult to say what that expression was really intended to mean, but to all practical men he thought it had only one meaning, and that was the natural fertility of the soil.

It was admitted by the author of the Paper that payment for a tenant's improvement was not to be based on cost, but on such sum as fairly represented its value to the incoming tenant. He did not suppose there were many cases in which any question would arise with regard to "the inherent capabilities of the soil," but he had one class of case in his mind which he thought might arise. Many very poor clay lands in Essex had in recent years been sold for anything, say, from £5 to £10 an acre, the greater portion of which had gone entirely out of cultivation because it did not pay to grow corn or to lay down. These farms were then let to tenants at low or nominal rents, not enough, in some cases, to cover the tithe. Since the date of many of these lettings the use of basic slags had become general, and by a judicious application of slag these hitherto valueless lands had been transformed, in some instances, into very excellent farms. When the tenant went out, in face of the very low rental value when he entered and the description of the land in his agreement as uncultivated, what would be the landlord's liability? He thought if a tenant brought the matter into the Law Courts it would be a very heavy one.

Section 3 had been well threshed out, and in connection with that he thought all the Members ought to

thank the Council, as he did personally, for drawing up the printed form of suggested heads of agreement, which was very complete. With regard to the purchase of feeding stuffs in place of the various hay, straw, and green crops sold off, he observed that no mention had been made of milk. He considered that in the case of dairy farms it was just as important that manure and feeding stuffs should be brought back and consumed on the farm as in the case of crops.

He was proposing, when he had to deal with such cases, to provide that a certain small sum should be deducted in the same way for milk as for hay, straw, and green crops sold off, and he should like the opinion of other Members whether that was a proper and fair provision. A halfpenny per barn gallon sold off was what he personally thought fair to deduct before the tenant was entitled to claim compensation for feeding stuffs on his outgoing.

In conclusion he could only add his voice to the general hope that this Act will work smoothly; he certainly should do his best, as far as he was able, to insure this result; but at the same time he could only regret the tendency of recent legislation to minimise the penalties for bad farming and to make it more difficult for a landlord to prevent his farm being worked out.

Mr. ARTHUR VERNON (Past-President) said he thought all were agreed that the Government had sought, through its advising Ministers, to confer upon the agricultural industry a great benefit. If it had been possible to collect together a large and representative body of farmers and landlords and to ask them what, during the last 20 years, this first and greatest industry

required for its restitution and to place it again in a flourishing condition, he thought three things would be unanimously named as necessary. Firstly, better prices, secondly, a reduction instead of an increase of local taxation, and thirdly, perhaps, a reconsideration of rents; but he thought they would have put this last, and deservedly so; for ever since 1879 agents must know it had been the consideration of landlords towards their tenants which had done so much to help them.

The Minister responsible for this Act, Lord Carrington, under whom it must be a pleasure to hold land, had laid it down as his ideal solution of the whole agricultural question that a farmer "so long as he paid his rent and "did his land well" should farm as he liked, should farm as long as he liked, should vote as he liked, and should pray where he liked. That constituted a very interesting "Farmer's charter," but it was intended, he believed, to apply only to *good* farmers. Now that expression "good" might mean a great deal, and it was the interpretation of such terms that would make difficulties in carrying out the Act. With reference to the remarks of a previous speaker, an agriculturist from what was called, he hoped deservedly, the Garden of England, it must be remembered that farmers, as well as agents and landlords, were very apt to take their views from experience in too narrow a circle, and to apply them as general principles to the whole country, disregarding its enormous differences of tenure, climate, and powers of production. But this speaker recommended that there should be a good report, or "record" as he called it, at the beginning of every tenancy, and he generously mentioned fees to which no one in that room would object. In such a report there should be, first, what would be very easy to take, a record of buildings,



fences, and erections, and then, what was also easy to an experienced agriculturist, a careful record of the cleanliness of the land, good cultivation, and rotation of crops. But there should be also, what could not be found in any text-book or taught in any school but that of experience—the most difficult of all—that to which the Act referred as the “unexhausted manurial value,” or the “good heart” of common terminology.

This was very closely connected with, and was indeed almost a blood relation to, what our legislators had abandoned in the present Act, “the inherent capabilities “ of the soil.” The inherent value was what it possessed, not from the time of Noah, not the prairie value, when it was reclaimed from common land, and had added to it all that could be gained by manuring and cultivation, and the accumulated wisdom of centuries, but what was known as the “custom of the country.” Some standard must be made by which to judge this value, and this must always be the custom of the country as applied differently to different lands. As all knew, on some land it was impossible to grow some crops after wheat or roots with anything like the same success as on other lands, and what became recognised as the common rotation depended entirely on the custom of the country. Legislators might leave it out of their Acts if they liked, but it was still the best and often the only standard to go on as to the value of the land.

Having been in considerable practice in several counties, he could confidently affirm that not one out of a hundred valuations was done under the Agricultural Holdings Acts. He had heard farmers ask “What was “meant by the Agricultural Holdings Act.” Many farmers were slow to believe in legislation and took a long time before they adopted a new idea, being loth to part

with what their forefathers believed to be the sheet-anchor of successful farming. He believed that whatever new Acts might be passed it would be many years before they were widely applied, and that agricultural valuations would generally be settled without reference to what was required by them.

There was one more important point that must be remembered. It was not this Act of Parliament that was going to infuse new life-blood and power into the national agriculture. It might create difficulties for landlords and take from lawyers the enjoyment of some agencies hitherto left in their hands—it might compel the owner who had practised as his own amateur land agent and had looked after his own land, to call in the assistance of a Member of The Institution—but the great thing would be, he hoped and believed, that, as in the past, so for many years to come, the prosperity of England's agricultural interests would depend upon the establishment and maintenance of good relations between landlord and tenant, and the fair administration and just dealings of agents on behalf of owners, tenants and labourers.

He believed the general opinion of land agents was not favourable to the Act. But Members of The Institution had a large share in the management of the land of the United Kingdom, and he was sure that, whatever duties the legislature might impose upon them by such an Act, they would use their best endeavours to administer it fairly.

He thought that in the result it would not give rise to the difficulties which so many had anticipated, because it would not be necessary to apply it generally. Other forces were at work upon which the prosperity of agriculture depended much more for the settlement of diffi-

culties than on any legislation. He thought in a few years' time this Act might assist in some of those directions which had been indicated, and if in the meantime all concerned were determined to administer it fairly so as to secure the best relations between landlord and tenant, the Act could be made so to work as to promote the happiness and prosperity of the agricultural industry, which, even now, was so little understood by the people of England, but which must always claim the attention of the legislature as a great source of the strength and prosperity of the Empire.

MR. GEORGE LANGRIDGE (Past-President) said that as the Paper was read during the time he had the honour of presiding in the Chair, he would endeavour to shortly summarise the discussion before Mr. Aubrey Spencer's reply. He believed that this Paper, and the discussions on it, would be regarded as a text-book on the Act for all classes interested who had been represented in the discussions. The only class that had not been represented was the farmer, who from perversity of disposition or want of capital got all he could out of the land without making any return, and it was for that class only that legislation was needed for the protection of the landlord.

He thought all concerned might congratulate themselves on the Act as it now stood, as compared with the Land Tenure Bill, which at first sight caused an unfavourable impression. The desire had been on all sides to make this a workable Act, and as far as possible to give the farmer every encouragement to invest his capital in the land.

He agreed with Mr. Watney and Mr. Eve that the phrase "inherent capabilities of the soil" was well left out of the Act, for it was difficult to know what it

meant ; but the words "such sum as fairly represents to "the incoming tenant the value of the improvements" afforded very fair sound grounds to go on, and he thought if that were adhered to no injustice would be done either to the landlord or the outgoing tenant. With regard to the erection of buildings and draining, it would be, as Mr. Aubrey Spencer said, manifestly unfair that the compensation should in such a case represent the suggested increased value of the farm instead of something approaching the value of the building or cost of drainage.

The planting of fruit, in which he was deeply interested, stood, he thought, on a different footing. A tenant should be well compensated for the planting, the compensation being based on the increased rental value of the land estimated on the time the fruit was likely to be in profitable bearing and calculated, say, on the 6 per cent. table. He thought every encouragement should be given to a tenant who farmed fruit at his own cost to do it properly, so as to make it worth something to the incoming tenant when his time expired.

Next, with regard to the single arbitrator: this point had raised more questions than any other; but on carefully reading what Sir Thomas Elliott had said, it would be seen that practically, until some hitch occurred and it was impossible to arrive at a mode of settlement, the ordinary system would prevail. He did not see how a farmer could well avoid having his own valuer to assist him in the first instance, in advising what he was fairly entitled to claim. The valuer's duty should be to act fairly, doing justice to his own man as he would between both parties, although privately interested in seeing that the party for whom he was acting did not lose anything unfairly or unjustly or by oversight.

The duties of an arbitrator differed, of course, from those of an umpire. The latter's duty was to decide on the evidence, and his own personal knowledge would be only necessary in weighing the evidence before him in order to form an opinion whether it was right or wrong.

There was one question he would ask the author of the Paper in relation to that matter. Would the award of the arbitrator be under the Arbitration Act, and therefore stamped with not less than a 10s. stamp? This was the "day of small things," and if in the case of a small award of £30 or £40, a 10s. stamp were required instead of the present valuation stamp, it would make some difference. He believed that whatever the stamp was, the custom was to charge a similar sum for the document itself.

The game section had also been very fully threshed out. It certainly might lead to some difficulties. If tenants were allowed, indiscriminately, to shoot their neighbour's game, it would not tend to create or maintain a neighbourly feeling in the district. There was not the least doubt, he should say, that the shooting tenant would contract out of an obligation of uncertain amount in which he appeared to have very little voice, and he much doubted if, in practice, the landlord would be able to resist the contracting out; but he believed that it would be only in a few cases that the point would arise.

With regard to the right to freedom of cropping, he thought there was a consensus of opinion that a tenant should be allowed to farm with a free hand; but, at the same time, it was equally desirable that in all agreements it should be laid down how a farm should be cropped in the concluding years of the tenancy, or it might be left quite useless to the incoming tenant.

With regard to selling off, he thought that the clause

calling on the tenant to return the manurial—he would not say the market—value of hay, straw, and roots sold off should remain. It was the only protection the landlord could have when the tenant brought nothing on, and he had never known a good tenant to object to it. He got a large proportion of the crop itself, and all the landlord would have a right to demand would be the manurial value of those crops now usually agreed to be consumed on farms. It would be very desirable also that in all agreements a schedule should be appended showing the grass land (and this was material under the present Act) which was to be left as grass at the end of the tenancy.

The section with regard to giving notice without good and sufficient cause was certainly a little difficult of interpretation, and he was afraid it might lead to having to get expensive advice or to cases in the Law Courts.

What good estate management meant might be regarded in many different ways. The time—three months—a tenant had in which to claim might lead to some little difficulty in settling up with him. Of course many landlords were willing to make concessions as to claims against tenants, but he was afraid many would now rather wait the three months before doing so. He doubted if a landlord, with three months hanging over him, would not prefer to let the whole question of valuation and claims rest until he knew what the tenant was going to do with regard to his claim for compensation.

With regard to market gardeners' compensation, he thought Mr. Aubrey Spencer took a lighter view of the retrospective clause than he did himself. He had occasion to give some decisions when it was thought the Act was retrospective, and in one or two hard cases where the land had been sold the tenant claimed a sum from the purchaser which was practically half the value of the land, after he

had already given what he considered to be a fair price at first hand, but it was afterwards ruled that the 1896 Act was not retrospective. This was now reversed in the 1906 Act. If fruit were planted 11 years ago it would now be approaching full bearing, and of great value, and it seemed a hard case if a man who purchased it as fruit land, believing that the law was in his favour, should have to pay over again for the fruit for which he had already once paid. Of course there must be hardships in every change of law, and everyone must try to carry out his business as fairly as possible, but retrospective legislation in such matters was liable to do serious individual injury. It was no doubt the intention of the House of Commons that the Act of 1896 should be retrospective.

It was pointed out by Mr. Aubrey Spencer that there were some difficult questions as to the actual tenancy of occupiers who were yearly tenants at the time of the passing of the Act and, no notice having been given, were supposed to continue until such notice could be given. It was a legal question, and he would not venture to give an opinion upon it, but if it were so, it would much limit the rights of those who could claim under the retrospective clause.

With regard to a landlord not fulfilling his duty as to repairs, if the material were not found the tenant suffered great disadvantage, and he thought it would be much better if the tenant had the repairs done without waiting, and could claim at once.

Another point was the record of the condition of the land. That would be a most desirable thing, but the landlord was not bound to accept the record of one man: there might be two, and then they might want a third as an arbitrator to put them right. He believed it

would in practice be a much more expensive matter to ascertain the condition of fences and buildings and land than Mr. Amos had suggested. He thought tenants would rather take their chance than incur the cost of a record made when they entered.

All would welcome the words of Sir Thomas Elliott when he foreshadowed the consolidation of the Acts passed from 1883 to 1906. It was very desirable that those Acts should be carefully revised and the best parts embodied in one Act. The references to the different Acts and schedules were often most difficult to follow even to a man skilled in the matter. He was constantly being asked what was meant, and he sometimes felt a little doubtful himself as to what the Acts really did mean. If these doubts could be avoided, landlords, farmers and agents would know better what they were doing.

Mr. AUBREY J. SPENCER, in reply, said that his Paper had been so fully discussed during the three evenings on which the subject had been under consideration that there was little left for him to say, and at that late hour he would not venture to inflict more than a very few remarks upon the meeting.

He desired, as on the former occasion, to express his thanks for the careful attention given to his Paper, and for the very kind remarks made upon it. Although the discussion had been very interesting it had naturally dealt with the question from the land agents' point of view rather than with its legal aspect, with which he felt, of course, more competent to deal.

In the course of his remarks, Mr. Sabin had pointed out a certain vagueness in some of the sections of the Act: for example, the use of phrases such as "as soon as

“may be” or “reasonable opportunity.” He was not sure that was altogether a defect in the Act. It meant that if any question arose under the section, the matter would be left to the arbitrator, who would have to say (being no doubt a man of good sense and competent to deal with the matter) whether the proper and reasonable thing had been done. It left a good deal of elasticity, although it might make it a little more difficult to say in some cases what compensation should be paid.

The very interesting speech of Mr. Amos from the tenant farmer's point of view would, he was sure, be thoroughly appreciated by the landlords, for if the Act would induce farmers to put capital into the land it would further all interests. But he thought it was going a little too far to say that a tenancy should never be terminated by a landlord except for non-payment of rent or bad farming. In the ordinary way that might be so, but if the rule were universal a landlord could never alter the rent, for as long as the tenant paid regularly he could go on at the same rent in spite of the fact that a general rise in prices warranted the landlord's claim to share in the general prosperity, the advantage of which the tenant was not entitled to alone. After all the land itself was the landlord's and not the tenant's, and the tenant was only paying for the use of it.

The remarks of Mr. Tuckett on the inherent capabilities of the soil justified his contention that no one really understood what the phrase meant, and he was glad that Mr. Watney and other Members of great experience bore him out in this. He thought those who administered the Act should put the inherent capabilities of the soil entirely out of their mind, and approach the matter as if the words were never in an Act, and they had never heard of them.

What had to be considered was, as the Act said, the value of the improvements to the incoming tenant. He still thought that the true principle of assessing that—which it was, of course, difficult to do—was to consider what was the rental value of the land in an unimproved state and what would be given for it by a tenant knowing that it was capable of improvement. The difference being ascertained, it was then only a matter of capitalising it. What had to be determined was what a tenant would pay (if he had the money) for land *plus* the improvements, and what he would pay for it without the improvements. He thought that if this standard were applied it would not take anything unjustly from the landlord and would yet give the tenant all he was entitled to. Of course, as Mr. Tuckett said, difficult questions might arise with regard to the Essex land of which he spoke, but he thought, if that standard were applied it would do substantial justice.

He agreed with Mr. Vernon as to the custom of the country and the accumulated knowledge of many generations, and that anything which would tend to obliterate these would be against the interests of good farming, and also that if agriculture was to prosper good relations between landlord and tenant were essential.

He liked Mr. Herbert Smith's remark that landlord and tenant were really partners in business, whatever Mr. Amos might think on the point, and he agreed that they should work, as he believed they generally did in this country, as if they were partners trying to help each other as far as possible. That was the proper relation between them, and he trusted that in ninety-nine cases out of a hundred those relations still existed.

A question was asked by Mr. Langridge which he was not sure he could answer, namely as to the 10s. stamp—

whether the award would come under the Revenue Act, 1906, making such a stamp necessary. Speaking without that Act before him, and not having had his attention directed to it, he should think that what the arbitrator gave as an award would come under that Act and would require a 10s. stamp, whatever the amount of the award might be.

It would be a formal document, and he should think would require the same stamp as an award under the Arbitration Act. He supposed that if valuers met together simply and came to an agreement it would not be a formal award, and would not therefore require an award stamp.

As to the desirability of the consolidation of the various Acts, he believed it was an open secret that the Government were going to bring in a Bill with that view, and, whatever might be the opinion on the provisions of the different Acts, it would certainly be very desirable to put them all into one, and this he hoped to see accomplished during the forthcoming session.

He would end, as he began, by expressing his thanks for the attention accorded to him and for the valuable discussion on the Act, to which he had given a good deal of time and attention and in which he was deeply interested. Such a discussion must be extremely useful, and he wished that members of Parliament, before promoting an Act of this description, would come to hear such matters discussed by men who, knowing all about the question, did not regard it from a merely abstract and academical point of view.

The Meeting then adjourned.

THE CALCULATION OF EQUIVALENT MANURIAL VALUES.

BY GEORGE CAWKWELL PHILLIPS
(PROFESSIONAL ASSOCIATE).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION held on Monday, December 9th, 1907.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

In dealing with this subject in connection with the provisions of the Agricultural Holdings Act, 1906, two questions immediately suggest themselves, viz.:—

What is the meaning of the words in Section 1 “the value of an improvement to an incoming tenant,” so far as they relate to feeding stuffs? and

What is the meaning of the words in Section 3 (1) “the return of the full equivalent manurial value to the holding”?

I take it that Section 1 refers to something added to an agricultural holding, and Section 3 to a similar something subtracted from such a holding in respect of which an equivalent return must be made.

In each case, whether it be an improvement to the

holding or a deterioration of it, the Act requires that an "equivalent" shall pass, either from the landlord to the tenant, in the case of an improvement made by the tenant, or from the tenant to the landlord where injury has been committed by the removal of produce "in contravention of the custom, contract, or agreement," under which the land is held.

The "something" for which the value of an "equivalent" has to be ascertained originally existed in some kind of cattle food or manure, which in the case of improvement had been purchased and consumed on the farm, thereby increasing its fertility, or which in the case of deterioration had been sold off the farm thereby decreasing its fertility.

If a tenant buys a quantity of food for the animals on his farm (other than the working horses), and they are fed with it during the last few years of his tenancy, it is universally recognised that he does not enjoy the whole of the benefit arising from the consumption of such food by the sale of the animals so fed by him.

There is a residual benefit in the manure excreted by the animals he has fed, which he would leave behind him, on quitting the holding, for the benefit of whoever might follow him, whether another tenant or the landlord.

The several Agricultural Holdings Acts, culminating with that of 1906, secure to the outgoing tenant that he shall be paid a sum of money for what he leaves behind.

It needs no argument to prove that the principle aimed at is fair and just, and by parity of reasoning, if a tenant sells off produce, which by custom, contract, or agreement, should be fed to live stock on the holding in order that the fertility of the soil may be maintained,

then the landlord is entitled to an equivalent, the value of which should be ascertained on the same basis as compensation to the tenant in opposite circumstances. The question which in every case arises for settlement is how much this sum of money shall be. The Act gives the answer, viz.: "The full equivalent manorial value," and it becomes the pleasing (or perplexing) duty of the agricultural valuer to assign to this expression its fair money value.

Before going more deeply into the subject, let me remark that this is not a question to be debated by analytical chemists, no two of whom ever agreed exactly in an independent analysis; nor is it a point to be settled by legal wisdom, but it is a matter which has to be brought to a practical issue by the agreement of two indifferent (sometimes *too* indifferent) persons or their umpire.

Those who are engaged in this kind of work know quite well that they are not dealing with mathematical exactitudes, but that it lies with them, as business men, to determine the exact sum of money which one man shall pay to another, and when the amount is ascertained, in ninety-nine cases out of a hundred the business is brought to a satisfactory conclusion and nothing further is thought about it.

The point under consideration is not whether this table or that table is absolutely and entirely correct, but whether there may be some simple uniform method of going to work upon a well-defined and generally adopted principle, which will enable agricultural valuers to settle points in dispute and bring out the amount to be paid and received in the form of so much £ s. d., without unnecessary delay or expense.

As this question has been already dealt with by

many able and experienced members of this Institution, it is quite unnecessary for me to go over the ground already traversed, beyond occasionally quoting the dicta of well-known authorities.

The previous discussions on the subject have centred round two different methods of arriving at the value required: (1) by taking a proportion of the cost price of the feeding stuffs purchased and used on the holding, and (2) by calculating the commercial value of three of the principal manurial elements contained in such food, and taking a proportion of their total value.

Both these methods are equally open to the allegation that they are in some respects haphazard and arbitrary in the way in which the proportions are arrived at. In taking a third, or a sixth, or a twelfth of the cost of the food, no one can assign a reason why, instead of these proportions, $\frac{1}{8}$ ths, or $\frac{2}{36}$ ths, or $\frac{5}{12}$ ths should not be allowed, except that, to the old-fashioned unscientific valuer, it is easier to divide by 3, or 6, or 12.

If the figures be taken in Lawes and Gilbert's tables as revised by Voelcker and Hall, the same arbitrary element is introduced by only allowing half the value of the nitrogen, and three-quarters of the phosphoric acid in the food used during the last year, and deducting half the total value for each previous year, in which a crop has been taken.

The merit of both methods is that each system affords a uniform basis for the valuer to work upon, and at least supplies a fixed starting point. But it seems to me that there is a strong and unavoidable element of approximation to the true value in both methods of calculation, which, by the very nature of the subject can never be ascertained with the precision to which we are

accustomed in dealing with mathematical certainties. Until the general body of valuers become better accustomed to the methods of science, I think it will be advisable to recognise a transition stage, and accord to opposing valuers the right to adopt which basis they deem best in the interest of their respective clients; and where the differences between them cannot be agreed upon, to leave the decision to an arbitrator, who would be free to adopt either basis, or having heard and checked the results obtained by each valuer could, at his own discretion award the amount of compensation on one or the other of the two bases, or on the generally recognised alternative basis of splitting the difference.

It is not like weighing up tea or sugar, gold or diamonds, in each of which operations some allowance has to be made for the turn of the scale, but in this matter, as Mr. Trustram Eve very truly says at the commencement of his Paper, "We are dealing with an item of valuation which cannot be viewed, measured, or weighed," and in settling the amount of such valuation the judgment of an experienced valuer of good standing will always have to be relied upon as the final court of appeal—tables, chemists, analyses, and experiments notwithstanding. All these are no doubt valuable in their several places, and calculated to assist the valuer in arriving at his conclusions, but after all it is the well-balanced brain of an individual man that has to ascertain all the facts and in the end to decide the point at issue.

In order to illustrate the mental chaos which prevails at present with regard to the whole question of compensation for feeding stuffs purchased and consumed on the holding, I have tabulated the customary allowances adopted in twenty-eight counties, leaving my hearers to

calculate out the money values in each case as compared with those obtained by adopting the basis of manurial value instead of cost of food.

I think the result will clearly prove the need of an act of compulsory uniformity and the establishment of a universal standard of value such as we have in the currency of the realm.

The exact sum to be paid to the outgoer in respect of the feeding stuffs which he has used on his holding is not, under the new Act, to be the cost, or any part of the cost, *quâ* cost of what he bought, but it is to be the full value of "something" which he cannot take away with him; "something" which the law recognises to be his property, but which he is compelled to leave behind on quitting his holding.

It is assumed that the outgoer, if he remained on his holding, would be able to get the full benefit of this "something" himself, in the growth of successive crops for which this something is useful; but because he has to leave the holding and someone else will farm the land, he is prevented from realising the value of his property himself, and the Act provides that the succeeding tenant or ingoer shall pay such a sum as this kind of improvement will be worth to him.

In other words, the outgoer is to be put into the same position, so far as it regards this "something" which he leaves behind, as he would have been in had he remained on the holding long enough to exhaust the total value of the improvement himself.

The two questions to be answered are these:

(1) What is the nature of the "something" we are dealing with?

(2) How is its money value to be ascertained?

The answer to the first question is that the "some-

“ thing ” is a combination of certain chemical elements essential to the growth of plants, such as are usually produced on an agricultural holding.

These elements, combined with other matter, formerly existed in the food purchased by the outgoer and eaten by his live stock ; part of the food went to increase the weight of the bullocks, sheep or pigs which consumed it, and the outgoer had the benefit of this in the prices realised.

The Act does not touch this part of the purchased food. It only deals with that portion which has been transformed from a food form into farmyard manure, and is equivalent to so much artificial manure.

The cost of the food, whether cheap or dear, only affects the profit or loss on the live stock fed and sold by the outgoer. The value of the residue is alone contemplated by the Act as the subject of compensation for which the outgoer has a right to claim, and the ingoer is required to pay.

This value can only be assessed on the quantity of certain chemical elements possessing fertilising qualities equivalent to the same elements present in commercial manures of equal value, hence the term “ full equivalent “ manurial value.”

The problem which the valuer has to solve is this :

What proportion of the total weight of the food used passes into the manure which the outgoer leaves behind ?

Chemical analyses and careful observation alone can give the solution.

Hence the need of the chemist and the necessity for tables which will inform the valuer on this point, and be accepted as of reliable authority.

It seems to be generally conceded that in this respect the revised table prepared by Messrs. Voelcker and Hall furnishes all that could be desired, having been compiled from the analyses of a great variety of feeding stuffs the conducting of a number of practical experiments and the ascertaining of the unit values of the three chief manurial constituents, viz.: nitrogen, phosphoric acid, and potash, deduced from the average price of these elements in a large variety of manures in ordinary use.

It should be distinctly understood that the prices per unit of the various constituents dealt with in the tables are not the prices of any one commercial commodity, but they are in each case abstract figures deduced from the price current of a great variety of commodities on the market, each of which contains a greater or less quantity of the chemical elements named in the table.

These figures will probably need revision from time to time, just as the bank rate controlled by the governors of the Bank of England rises or falls. This revision should not be made by individual valuers, but be controlled by some properly constituted governing body invested with parliamentary powers and responsibilities.

In accepting Messrs. Voelcker and Hall's tables as a standard of value, *pro tem*, we must never lose sight of the fact that only half the full manurial value of the nitrogen and three-fourths of the phosphoric acid are taken as "the full equivalent manurial value" of such elements as go into the farmyard manure left on the holding, and from which no crop has been taken.

Where one crop has been taken the "full equivalent

“manurial value” is further reduced by taking one-half of the first half, and so on with each crop taken by the outgoer after the application of the farmyard manure.

In order to make this point perfectly clear, I have compiled an entirely new form of Voelcker and Hall’s table. The figures are exactly the same as in their table, but by being differently arranged I venture to think that the valuable information supplied by them will appeal more clearly and forcibly to the average valuer, and more especially to those who are not continually occupied in this kind of work, or well acquainted with agricultural chemistry.

I have also added for comparison (1) the table of Lawes and Gilbert as originally published and revised by them (2) the scale adopted by the Central Chamber of Agriculture, and finally with the kind assistance of the editor of the *Mark Lane Express* (3) the prices current at the present time of the various feeding stuffs mentioned in the tables.

In this table each feeding stuff heads a vertical column which contains all the information relating to it, and as the valuer has to deal with only one food at a time he will find it much easier to run his eye down the one column than having to trace a number of figures along a horizontal line, and then refer for comparison to several other tables.

Another point for consideration is this :—The figures in the table do not give the sum of money which is to be awarded to the outgoer as the “full equivalent” “manurial value” of the feeding stuffs consumed on the holding, but only the calculated theoretical value. For instance, say that ten tons of decorticated cotton cake

had been consumed in the last year of the term, the table gives its theoretical value as under :—

		Total value.			Proportion of value in dung.		
		£	s.	d.	£	s.	d.
One ton contains—							
6.90% nitrogen	@ 12s.						
	per unit =	4	2	10			
Half of this is left							
in the dung ...	...	...	...	...	2	1	5
3.10% phosphoric acid	@ 3s.						
	per unit =		9	4			
Three-quarters of this is left in							
the dung ...	...	...	...	...		7	0
2.0% potash	@ 4s.						
	per unit =		8	0			
All this is left in							
the dung ...	...	...	...	...		8	0
						2	16
							5
Multiply by tons of food used							10
Total theoretical value of ten tons of							
decorticated cotton cake, in farmyard	}						
manure, on or in the holding, and from							
which no crop has been taken.							
					£28	4	2
If this quantity had been used in the year before the last and one crop taken afterwards the theoretical value would be one-half the above amount, viz.:							
					£14	2	1
If two crops had been taken only	-				£	7	1
If three crops had been taken only	-				£	3	10
If ten tons had been used in each of the four last years the claim would be as under :							
In the last year	-	-	-	-	£28	4	2
In the year before the last	-	-	-	-	14	2	1
Two years before the last	-	-	-	-	7	1	0
Three years before the last	-	-	-	-	3	10	6
Total claim for four years	-	-	-	-	£52	17	9

The Act requires that the *full* manurial value shall be paid to the outgoer, and if it be an ascertained fact, based upon practical experiments made by reputable chemists, that manures applied to land four years back give evidence of their presence in the soil, then I take it that the assigned values given by the table to the third and fourth years before the last must be brought into the calculation, and local associations of valuers are acting *ultra vires* in ignoring them. This is why the word *full* is added to the words "equivalent manurial value."

The valuer for the outgoer in making up his client's claim would probably ask to be paid the whole amount of the theoretical value of the food consumed, but this would not necessarily be the actual value to an ingoer.

It has been urged by Mr. Eve that something should be added to the table figures in the two following cases—

- (1) Where the cattle have been fed in covered yards or sheds, or the dung has been properly protected;
- (2) Where the food has been fed by sheep direct to the land;

and he has told us of circumstances in which something should be deducted from these figures—

- (1) If consumed by milking cows.
- (2) If consumed by young store stock.
- (3) If wholly consumed in open yards and not in any way protected.

Some members who took part in the former discussion on the Papers read by Mr. Eve have mentioned other circumstances, such as different modes of cropping, application to light or heavy land, and the fluctuating prices of corn and stock, as having an influence on the value of these manurial elements to an incoming tenant.

I think Dr. Voelcker has very clearly answered these

points in drawing attention to the fact that the allowance of 50 per cent. on the nitrogen, and 25 per cent. on the phosphoric acid, by which the total value of the elements is reduced to the basal theoretical value, covers all these varying circumstances, and where no other circumstances could be brought forward, it would justify the full amount, as calculated from the tables, being awarded as the "full equivalent manurial value" of the residuum of the food consumed.

But there are three conditions under which I venture to think that the valuers might be expected to exercise their own judgment in either adding or deducting a percentage, to or from, the above theoretical figures.

- (1) Where the land upon which the manure made from purchased foods has been judiciously dressed with farmyard manure at intervals of less than four years.
- (2) Where land has not been properly tilled and prepared to absorb the manure bestowed upon it.
- (3) Where land upon which such manure has been bestowed has become foul.

In the first case, I think the valuer for the outgoing tenant would be entitled to add 10 per cent. to his claim as a bonus for good farming, and that the valuer for the ingoer would be fully justified in giving it, on the ground that land so treated would possess a store of fertilising matter and would require therefore less manure for several years, and consequently the improvement would be more valuable to his client. At the same time it must be borne in mind that upon land saturated with manure the application of more has no beneficial effect.

In the second case, if the land were not rendered by proper acts of husbandry sufficiently pulverised and

capable of absorbing the manure applied to it, I should, if acting for the ingoer, claim a deduction of 25 per cent. from the table figures.

In the third case, if the land were foul, I should, if acting for the ingoer, claim a deduction of from 25 per cent. to 75 per cent. from the table figures, on the ground that the effect of manure upon such land would be to stimulate the growth of weeds detrimental to the legitimate crop.

There is a fourth condition in which I think the tables need some adjustment.

I am a great believer in what is known as "Liebig's "Law of Minimum," in which he asserts that there are *four* essential elements of plant food, and that if any one of these is not present in the soil in a form easily assimilable by plants, then the action of the other three is checked and to some extent neutralised.

The fourth element he says is lime. Having had 50 years' experience on Essex clays, I am greatly impressed with the importance of lime. Where it is absent, the fertility of a soil is of a low character, and to this must, to a great extent, be attributed the vast area of this class of land which has gone out of arable cultivation and fallen down to a poor quality of grass possessing no fattening capabilities.

Besides exercising a valuable chemical action upon other constituents of plant food, lime is a great sweetener of the herbage, especially on cold wet clays, and it also has a valuable mechanical action in rendering such soils more friable and responsive to the various processes of husbandry necessary to the obtaining of a good tilth.

In protecting the interests of a landlord or his incoming tenant against a claim for the unexhausted value of feeding stuffs consumed on a poor clay farm, I should

want to know something about the lime present in its soil, and in its absence, or in its presence in insufficient quantity, should largely discount the claim as affecting the "full equivalent manurial value" of the other three elements which constitute the residue of the foods consumed on the holding.

In the discussion upon Mr. Aubrey Spencer's Paper, which took place on the 25th November, Mr. Tuckett mentioned the application of basic slag to Essex clays as having altered the annual rental value of such land from 5s., or some similarly small sum, to £1 per acre, and I think it was suggested that it might be claimed on behalf of an outgoing tenant who had in this way improved his holding, that he would be entitled to receive the difference in value, viz. 15s. per acre, capitalised upon a 6 per cent. table, equal to 16·66 years' purchase.

Such a claim could be easily exploded on two grounds: first, that one or a series of basic slag dressings could not be treated as a permanent improvement *per se*, but such dressings would need to be periodically renewed at frequent intervals; and second, the very marked difference produced by the use of basic slag on Essex clays is due to the "inherent capabilities" of this class of soils, when dressed with a manure containing phosphoric acid and lime in a highly assimilable form.

Apply basic slag to a calcareous soil, or one that has been thoroughly limed within 20 years, and basic slag does not tell the same tale. This is a case in point where the "inherent capability" of a particular soil has an important meaning which would limit the value of an improvement in respect of basic slag to something nearer one year's purchase instead of 16 years.

Again, the "inherent capability" of a peat soil should protect the owner from a claim for the applica-

tion of a heavy dressing of nitrogenous manure, which on such a soil would have no value to an incoming tenant. In fact "the soil" of each field has its own "inherent capability" in relation to any particular manure or fertilizer applied to it for its improvement, and it is only in particular instances that the general phrase "the inherent capabilities of the soil" has a definite meaning.

To me it is a special matter of regret that the words "the inherent capabilities of the soil" in the Act of 1883 have been omitted in the Act of 1906.

If these words meant anything at all they were intended to convey the idea that every soil was capable of producing some measure of crop without the assistance of manure, and that the residual value of feeding stuffs brought on to the holding was to be measured by the increased yield which would result from the use of manure made by cattle fed with food not grown on the holding.

Now if it can be demonstrated that as large, or even larger, crops can be grown on some soils (notably Essex clays) without using any manure whatever, compared with those usually grown with the addition of farmyard manure enriched by the feeding of oil cake and other valuable nitrogenous and phosphatic foods, or by the use of artificial manures rich in these essential elements of plant food, then the words "inherent capabilities of the soil" have a meaning of substantial importance, and it must be a matter of regret to owners of such land that they have been erased from the present Act.

In order to illustrate this point, I crave your patience for a few minutes whilst I briefly relate two experiments made in Essex some 20 years ago, which came under my own personal observation.

In the first experiment a strip of land 6ft. wide was left across the middle of a large field under preparation for growing a crop of mangold, and not manured.

One-third in length of this strip was sown after the ordinary course of husbandry, but with no manure whatever, and it grew a crop of mangold at the rate of 16 tons per acre.

Two-thirds of the strip was tilled exactly as the one-third, and as the rest of the field had been cultivated, but this was dressed with clay taken from the field, dried and ground in a disintegrator, having steel beaters giving 3,000 blows per minute, by means of which the clay was reduced to a perfectly impalpable powder as fine as flour or snuff. The portion of the strip so dressed produced a crop of mangold at the rate of 33 tons per acre.

The remainder of the field was cultivated at the same time and in the same way, but manured with 16 tons of good rotten farmyard manure, and 6 cwt. of artificials per acre, yielding a crop of 32 tons of mangold per acre.

The first portion, which produced 16 tons per acre, indicated the normal yield under tillage alone, in other words "the inherent capabilities of the soil" under ordinary conditions of cultivation apart from the use of manure.

The second portion, which produced 33 tons per acre, brought out "the inherent capabilities of the soil" under extraordinary conditions of mechanical pulverization, without the application of an ounce of manure. The additional 17 tons per acre from this ground was procured at a cost of about 30s. to £2 per acre without the use of any manure, whilst the extra 16 tons per acre manured with dung and artificials cost £6 per acre.

In further confirmation of this "inherent" or latent virtue or "capability" in clay, when perfectly pulverised

and its finest particles brought into direct contact with the gases of the atmosphere, namely oxygen, nitrogen, hydrogen (in moisture), and carbon di-oxide, a second experiment was made on the same farm two years afterwards.

The top soil to a depth of 12 inches was removed from a piece of ground in a field to be sown with barley. The virgin subsoil was then forked up by hand a spit deep and divided into five plots.

One plot received no manure, was sown with barley and grew nothing.

The three adjoining plots were dressed with perfect barley manures and sown with barley; but did not reproduce the seed.

On the fifth plot, which was dressed with impalpable clay powder, at the rate of about 15 tons per acre, there was a crop of the finest barley that ever grew out of the earth, equal to $5\frac{1}{2}$ quarters per acre, grown from virgin subsoil without the aid of an ounce of manure.

I should not have introduced the account of these experiments here but for some remarks which fell from a speaker during the discussion of Mr. Aubrey Spencer's Paper, to the effect that he really did not know what the words "inherent capabilities of the soil" meant. I trust that when the Government takes in hand the consolidation of all the Agricultural and Market Garden Acts, as promised by Lord Carrington, these words will be restored, and I hope it will be made compulsory that a stretch of land in every arable field should be left unmanured every year in order that the landlord may be able to compare the "inherent capabilities of his soil" with the alleged improvements made by manuring.

I maintain that the mechanical condition of any soil, to which manure made from purchased feeding stuffs

has been or will be applied, has a great deal to do with the value of the improvement to an incoming tenant.

A hundred tons of dung spread on a macadamised road would be worthless for promoting plant growth, and if applied to land which has been imperfectly tilled its value would be greatly diminished. Such circumstances must be taken into the valuer's consideration in dealing with an outgoer's claim for compensation.

The vast importance of tillage, which is nothing more nor less than exposing earth to the action of the air and sun, was well recognised by Virgil in his inimitable *Georgics* in the following graphic lines:—

“ Produce the plough, and yoke the sturdy steer,
“ And goad him till he groans beneath his toil,
“ Till the bright share is buried in the soil,
“ That crop rewards the greedy peasant's pains,
“ Which twice the sun, and twice the cold sustains,
“ And bursts the crowded barns with more than promised gains.”

These words were written 70 years before the Christian era began, and no doubt prompted Jethro Tull, whose magnificent portrait now hangs in the temple of the Royal Agricultural Society of England, to improve the methods of tillage in his day, upwards of 200 years ago.

Nearly 2,000 years since M. P. Cato, the Roman farmer-censor, asked the Italian farmers, “ What is good tillage ? ” “ To plough.” “ What is the second ? ” “ To plough.” “ The third is to manure.”

Tull's grand principle was that tillage and tillage alone will create and supply the food of plants, and in many cases will render manure wholly unnecessary.

Tull lays it down as a sound principle of good husbandry that “ dung without tillage can do very little, “ with some tillage it does something, with much “ tillage dung helps to pulverize the soil in less time

“than tillage alone can do, but tillage alone with more time can pulverize equally well.”

Again he says, “The finer land is made by tillage the richer it will become, and the more plants it will maintain.” He adds, “land may be so barren that plough or spade may not be sufficient to pulverize it to that degree which is necessary to give it fertility,” in such a case he says “pounding it in a mortar or grinding between marbles would effect the same purpose.”

This is exactly what was done in the Essex experiments 200 years after Tull had conceived and recorded the idea, a marvellous instance of the immortality of thought.

Sufficient has been said to guard against the danger of over-estimating the intrinsic value of manuring as something apart from, independent of, and superior to, perfect tillage.

The word manure is said to be a contraction of the French word “*man-œuvre*,” that is, literally, hand-work. The early notion of manure was neither chemical salts nor farmyard muck, but plain spade labour.

Manure in olden time did not mean something bought or made to put into the soil, but rather honest double-digging and hand-hoeing. If something could be contrived to induce the ordinary farmer to practise a more vigorous cultivation of the soil instead of gently turning it over with a pair of old worn-out horses, it would be the better for all parties, and the unexhausted value of more perfect tillage would in course of time be placed on even a higher platform than that of unexhausted manures.

The conclusion of the whole matter is this: the true intent and meaning of the words “the full equivalent ‘manurial value’” is not necessarily the exact figures

given in the table, but the money value of certain fertilizers left in the land, which can only be ascertained with sufficient accuracy by taking these figures as a basis of value and adjusting them according to all the surrounding circumstances of each case.

I think all will agree that Mr. Eve is entitled to the congratulations and thanks of every Member of this Institution for the admirable way in which he brought forward the subject of compensation and laid the foundation for a true basis of value; and the gentlemen who have taken endless trouble to tabulate the results of numerous analyses and experiments have earned the gratitude of every valuer who may hereafter be called upon to assign a fair money value to the words of the Act, "the full equivalent manurial value" of "feeding" "stuffs purchased and consumed on or removed from" "the holding."

The Secretary read the following communication from Dr. J. AUGUSTUS VOELCKER, M.A., F.I.C. (Consulting Chemist to the Royal Agricultural Society of England), who had written expressing regret that he was unable to attend the Meeting:—

I cannot but be appreciative of the kindly references by the author to the tables drawn up by Mr. A. D. Hall and myself, and of the importance which he attaches to them.

I could, however, have wished that he had gone a step further than he has, and abolished altogether the idea of allowing the market price of foods to enter into his calculations.

It is quite true that there is some element of an

arbitrary character in the fixing of the manurial value of foods according to their chemical analysis, and also with regard to the period over which compensation is to be spread. But, at all events, the basis on which this method of valuation proceeds is a right one, whereas the other, that of original cost price, is a thoroughly wrong one. So I cannot allow that the two systems have equal merits, or can be rightly combined, or that liberty should be given to valuers to adopt whichever they think best.

To give specific instances in support of my contention, one has but to take the first table in the author's Paper. Linseed, according to this table, costs £12 7s. per ton, whereas linseed cake costs only £8 a ton—a difference of £4 7s. per ton—yet, considered in respect of the manurial constituents they severally supply, the cheaper food (linseed cake) has 8s. a ton greater value than the dearer one.

Or again, to compare linseed cake and decorticated cotton cake. Linseed cake is 10s. a ton the dearer in the market, yet the manurial value of decorticated cotton cake is nearly £1 a ton more than that of linseed cake.

The truth is that particular foods possess particular values as feeding materials; they are used for specific purposes, and the farmer knows this quite well, and is willing to pay the prices for them independently of their manurial value. To give a concrete example from my own experience, at the Woburn Experimental Farm we purchased maize last year for feeding purposes, and paid 23s. per quarter. This year, for just the same quality we had, in consequence of market changes, to give as much as 31s. per quarter, or 8s. per quarter more. Now the manurial value of the one lot was not a bit higher

than that of the other—in other words an outgoing tenant would have received in each case the *same manurial benefit* to his land. But if cost price of the food were the basis of valuation of the compensation to be paid to him, it would make all the difference whether this was assessed on the price ruling in 1906 (23s. per quarter), or that in 1907 (31s. per quarter). This would manifestly be an unfair basis to reckon upon.

In short, the cost price of foods is dependent on fluctuating conditions which have no relation whatever to the manurial benefit imparted to the soil, whereas the composition of the food in regard to its manurial constituents remains constant.

I therefore protest against this being left an “open” question any longer, and maintain that the cost price, having been found quite misleading as a basis of calculation, should be banished from consideration.

In this connection one must regret the recent retrograde action of the Staffordshire Chamber of Agriculture in adopting the cost price as a basis of calculation. On the other hand, it is satisfactory to see, by the table prepared by the author, to what an extent the new tables, whether of the Central Chamber of Agriculture or of Mr. Hall and myself (these being, for most practical purposes, the same), have already been adopted, and I have little doubt that, as time goes on, they will be more and more brought into general use.

Coming now to the author's own tables. He has certainly rendered a service in putting out a comparison of the different systems. There may also be a certain amount of convenience in grouping, in a collected form, the information regarding each food separately. But beyond this, I do not see that there is any particular

advantage. The table of cost prices, as being fallacious as a guide, should not be included, while Lawes and Gilbert's Tables are practically replaced by the more recent ones of the Central Chamber and of Hall and myself. Further, the comparison of one food with another is not made so readily as is the case in our tables, and the substitution of six tables for the single one of Hall and myself is a very doubtful benefit. I certainly consider that one of the great merits of our tables was that they combined *on one sheet* all the matter of Lawes and Gilbert's three different tables.

Everyone will agree with the author that the tables are in no way meant to dispense with the valuer, or the exercise by him of his discretion as to the modifications which must be made to meet special circumstances. They are intended purely to afford a fair basis for initial calculation of manurial value, but their actual application must necessarily be governed by a consideration of the particular conditions that rule in each case.

Coming, lastly, to other points discussed by the author in the latter part of his Paper, I am disposed to think that he has travelled somewhat beyond the scope indicated by the title. This has involved the introduction of a new feature—tillage, and the influence produced by it. Clearly, if proper cultivation of the land be not exercised, the manurial ingredients applied will not afford their proper—still less their theoretical—benefits. This is one of the points which the valuer would have to take into consideration, but it would not affect the question as to what is the proper basis on which to fix the manurial value of foods consumed on the farm.

Of a like character is the matter of liming, on the importance of which the author very properly insists.

Mr. GEORGE LANGRIDGE (Past-President) said he had very great pleasure in proposing a cordial vote of thanks to Mr. Phillips for his able and useful Paper. The details given were interesting, and some points were, to him, absolutely novel. With a great deal of the Paper he was sure all must agree; there were, however, some points which would require careful consideration before giving a full assent to them, and still others on which there might be very considerable difference of opinion.

He might be wrong, but if so he erred in good company, in holding that the omission from the present Act of the words "inherent capabilities of the soil" was not a matter for regret. So far as his experience went, the phrase only added to the difficulty of arriving at a settlement with regard to what was to be deducted from the tenant's interest in respect of the so-called "inherent capabilities." That was why he and many others did not regret the exclusion of those words from the Act which was soon to come into force.

The old system, which was no doubt radically wrong in principle, based the compensation on the actual cost of the material, but when that system was first established those valuable tables of Messrs. Lawes and Gilbert and Messrs. Voelcker and Hall were not available. The outgoing tenant was still often compensated on the old basis, which was generally agreed to both by incomer and outgoer, because it represented an easily ascertainable amount, for the incomer would in his turn be paid on the same basis and on an equally liberal scale—a fact which not only encouraged the use of cake, but confined the inquiry to a definite limit of two or three years. Some difficulty might occasionally arise, owing to a landlord being called upon to put his hand into his

pocket, because the incoming tenant refused to recognise the value of the improvement.

Another very difficult matter was dealt with by Mr. Phillips when he spoke of the value of powdered clay, which seemed from the author's experience to indicate a great future benefit to the farmer; but it was not stated whether clay so used was subsoil clay or surface clay which had been cultivated and treated with manure, possibly for some years. He had that morning come up through Essex on the Tilbury line, and it appeared to him that treating with subsoil clay in the manner suggested might in many cases be of great benefit to the farms.

All valuers would agree that a great many circumstances must affect the unexhausted value of feeding stuffs on different farms. Tillage was, as Mr. Phillips had said, a very important point. If the land were broken up, corn sometimes responded even too freely to the application of heavy dressings of manure, while the binding down of the surface of heavy land tended in many cases to retain the manurial properties in the soil until it was effectually tilled.

As far as he knew, Messrs. Voelcker and Hall were right in the proportionate value given to nitrogenous and phosphatic constituents; but valuers must always take into account the different conditions under which those substances had been applied to the land, and the state of the land to which they were applied. Manures made under cover and properly protected must undoubtedly be more valuable than those made in open yards, which were sometimes mere ponds that often, perhaps, overflowed. Certainly he should say that the residual value of manure applied three years ago on stiff soil would be greater than if it had been used on sandy soil where the

water easily percolated and carried the manurial constituents with it. Many manures depended for their value on the way the soil retained them.

He wished in conclusion to congratulate Mr. Phillips on his valuable tables, and he was sure he had the Meeting with him when he proposed a hearty vote of thanks in acknowledgement and appreciation of all the care and labour which must have been expended in the preparation of his able Paper.

Professor W. SOMERVILLE, M.A., D.Sc. (Associate), said that while it gave him great pleasure to second the vote of thanks to the author of this interesting and, to his mind, most valuable Paper, he did not propose to stand more than a few minutes in the way of those Members of The Institution who were ready to discuss it from the point of view of the practical valuer.

The subject, of course, bristled with points of difficulty, and however long it were discussed he did not suppose the discussion would end in exact agreement.

It seemed to him that what one should endeavour to do in assessing the value of unexhausted improvements to an incoming tenant was to go on some reasonable, definite, and common-sense principle, not attempting to split hairs or to use too intricate fractions. The case of a tenant, either outgoing or incoming, should be put in the hands of a good practical man who might be fairly depended on to bring intelligence to bear on the problem, and when again a valuation came to be made, perhaps years later, the subject should be dealt with in the same common-sense and intelligent fashion. A little more or less in a valuation was, after all, a very small matter if tenants could feel sure that in going out of any

particular farm they would be receiving approximately the same treatment as on going in.

The convenience of taking the cost price of feeding stuffs and estimating the unexhausted improvement on that basis was, of course, obvious, but he thought nowadays most valuers and Valuers' Associations had recognised the advantage of dealing with the matter on the basis of residual value rather than on that of cost.

In the letter just read Dr. Voelcker gave, he thought, a good example of this when he said that two linseed cakes might be of the same cost, and yet one might be of essentially higher manurial value than the other, and should therefore be compensated for at a higher rate.

The author had travelled a little away from the subject of the residual value of manures and feeding stuffs when he spoke of the value of tillage, and he would not, he hoped, find fault with him (the speaker) if he did not stick strictly to the question of the manurial value of feeding stuffs.

If one were to go on the basis of cost, where, for example, would a farmer be who was fortunate enough to have married the daughter of a manure manufacturer, and whose father-in-law was generous enough to present him with his manures and feeding stuffs without any charge at all? How would the valuer arrive at the residual value on the basis of cost if no cost were involved in the acquisition of those substances?

Another case which suggested itself to him, and which he had met with in his actual experience, was where a farmer manufactured his own artificial manures. He bought at a low price the bones and the vitriol, which he put together on his farm, and in such a case was apt

to apply very heavy dressings and pile up a heavy claim. He thought a valuer on such a farm would find it difficult to put a value on the unexhausted improvement in the same way as in an ordinary case.

Then there was the question of adaptability of manure to a particular soil. Take the question of potash, which for most crops on strong clay land had no value whatever. Those were matters that must be taken into account in assessing the value of the residues.

The law of minimum had been referred to, and he agreed with the author of the Paper as to its effect. In the north of England, where he had worked for many years, he had excellent illustrations of the action of that law. Some land there was so light that one might apply phosphates and nitrogen to any possible extent, and the more one put on the less would be the yield of roots. But a few hundred pounds of potash applied to that same land at once doubled and often trebled the crop, showing that without the potash the others had no value at all. That showed how complicated the question was. Should one, in the case of land where crops could not utilise nitrogenous and phosphatic substances, give the value of those substances as unexhausted manure, knowing all the while that they could not do much good unless potash were used along with them?

It seemed to be suggested that lime should be added to the list of elements for which value was claimed and awarded. He believed that was not necessary. If one were to add lime and to assess its value as unexhausted residue, he thought one would require to reduce the value of the other three elements concerned. If lime were to be added why stop at that? Why not add magnesia, and, if so, why not sulphur and iron and other substances which were as necessary and essential

for the growth of plants as nitrogen, potash, and phosphoric acid?

Then as to "the inherent capabilities of the soil." He was one of those who thought that the Act would be better if those words had been retained, for as things at present stood the incoming tenant was entitled to get from the outgoing tenant the full benefit of the manurial operations that had been performed on the farm. An excellent illustration had been given of what happened under certain circumstances where basic slag was applied. He knew a farm held by the Northumberland County Council where 10 cwt. of basic slag per acre was applied in 1897 at a cost of about 30s. Nothing had been put on that land since, and yet, after something like eleven years, the effects of the basic slag were not only apparent, but he might say they were striking and marvellous. Supposing on an adjoining and practically similar farm a tenant applied half a ton per acre of basic slag and left his holding after, say, a year. The figures showed clearly that after a single year he got back his 30s., and then it was equally clear that after the second, third, fourth, and subsequent years the tenant got back a sum not much short of 30s. So, in fact, from the application of 30s. worth of basic slag there would probably result a return of £5, £6, or £7. It was clear the land was benefited to a far greater extent than the cost of the manure, and as he read the Act there was no limit to the advantage to an outgoing tenant, who could claim the full manurial value to an incoming tenant.

It appeared to him that "the inherent capabilities of the soil" should be considered to a certain extent, so as to meet the circumstances of the cases dealt with by the Act. The case of basic slag was a most striking illustra-

tion, but we were possibly on the very threshold of the development of treatment of land from a bacteriological point of view.

It was not unlikely that only certain classes of soil would respond to treatment by Nitragin and similar substances, but if land could be vastly improved by the outlay of a few shillings, was the owner to be deprived of the advantage of owning such property?

The subject, as he had said, bristled with difficulties, but that did not prevent his appreciation of Mr. Phillips' endeavour to deal with it, or his pleasure in seconding a hearty vote of thanks to him for the trouble he had taken in laying the matter so clearly before The Institution.

Mr. W. F. INGRAM (Fellow) said he had great pleasure in adding his testimony to that of the proposer and seconder of the vote of thanks for Mr. Phillips's most interesting paper.

The author said, on page 63, that "in ninety-nine cases out of a hundred the business is brought to a satisfactory conclusion, and nothing further is thought about it," but in his experience of valuations under the Agricultural Holdings Act, he found that as a rule matters were not brought to a satisfactory conclusion quite so easily. He thought that as the manurial value was the basis of compensation under the Act the consideration of cost might be dropped. Further on Mr. Phillips referred to the possibility of adopting this as an alternative basis, which seemed to him a little contradictory to the passage where he said, "I think the result will clearly prove the need of an act of compulsory uniformity and the establishment of a universal standard of value."

He thought valuers throughout the country generally

would have to agree on a universal basis. At present some of them went by Messrs. Lawes and Gilbert's table and some on Messrs. Voelcker and Hall's, while others valued on the basis of cost, and when one went from one particular district into another there was often considerable difficulty.

The tables so kindly prepared by Mr. Phillips would, he believed, help considerably, and with that end in view he should like to see them in the possession of every Agricultural Valuers' Association. As to the revision of such tables from time to time, he did not quite know whose duty it would be to revise them—whether it would be left to the Council of The Surveyors' Institution or to experts like Messrs. Voelcker and Hall.

He should like to refer to Mr. Phillips's apparent proposal for a total claim for four years. He believed he said that valuers generally were wrong in confining the time to a two years' claim. A previous speaker had also stated that a claim for the whole value must be made. If one went back as far as four years he thought great difficulties would arise. It must be remembered that the incoming tenant had to pay the valuation, and if the amount were increased very much, it was either not easy to let the farm, or the landlord must pay part of the valuation. Another point was that in making a counterclaim, say for hay sold off, it was difficult to go back several years, as to insist on statements of all produce sold off was a great annoyance to the tenant. He should not object to go as far back as four years if a fair counterclaim were allowed.

The great difficulty in a tenant-right valuation was that the valuer, as a rule, did not sufficiently recognise a counterclaim. The result was that a bad outgoing

tenant got treated practically as well as a good outgoing tenant. He thought tenant-right valuers generally should take a stronger line and give that point more consideration. What it came to was that the landlord could not treat the good outgoing tenant well, because he had often to set him off against the bad outgoing tenant.

He observed that to meet this Mr. Phillips proposed that various allowances should be made. He thought, with regard to an outgoing tenant, that a higher scale ought to be paid where the manure had been kept in covered yards, and that a lower scale should be allowed where the feeding stuffs were consumed by milch cows, and so on.

He need not go into details, but speaking generally with regard to the proper tillage of the land and foul land, he certainly thought the valuer ought to recognise such matters and be prepared to meet them fairly.

It was a pleasant surprise to him to find two champions of "the inherent capabilities of the soil." It was a pity that before those words were taken out of the Bill those responsible had not had the opportunity of reading the Paper and hearing the seconder of the resolution.

He did not think it necessary at the present day to follow Virgil entirely, or that anyone would now want to go back to two years' fallow.

Mr. J. HUGHES (Visitor) said he could not help thinking that in framing any valuation the cost of material must to some extent be considered. It must be remembered that, notwithstanding the variations in market prices alluded to in Dr. Voelcker's letter, farmers had to buy their materials at whatever the market price might happen to be, and must in some years pay more

than in others for certain feeding stuffs. It seemed only fair that a valuer should take this fact into consideration, at the same time making use of the very valuable tables prepared by Dr. Voelcker and Mr. Hall. It had been mentioned that the figures in these tables were rather calculated to give a lower value than if the cost price of the material were taken. He had been looking over the tables, and he was inclined to think that they gave a very full value. He thought the value of nitrogen at 12s. per unit was a very high price, for the usual class of materials contained a very small quantity of nitrogen.

Decorticated cotton cake was, he thought, unfairly put at 12s. per unit, or 41s. 5d. a ton, which represented about 3·45 of nitrogen, or half the original quantity, for at the present time one could purchase wool manure containing 6 per cent. of nitrogen delivered for 36s. a ton, which worked out at about 6s. per unit. Thus the incoming tenant was made to pay for the manurial value of nitrogen from decorticated cake at a very high rate. He certainly did not think the tables gave too low a figure, but, if anything, that they were rather too high. He was deeply interested in the subject, as holding the post of official analyst for Herefordshire, in which county a large amount of wool manure was used, with great advantage, as a cheap fertilizer for hops.

The PRESIDENT said that as time pressed he would not detain the Meeting with any remarks of his own on the Paper, but would ask all present to join him in a most cordial vote of thanks to Mr. Phillips. If any other Members present wished to add their views he would suggest their communicating them through the *Professional Notes*.

The vote of thanks having been put and carried unanimously,

Mr. PHILLIPS said he desired to thank the Meeting very heartily for the kind way in which his Paper had been received. As time was short he would certainly adopt the President's suggestion, and defer answering the points raised by the speakers until he could do so in the next part of the *Professional Notes*.

The Meeting then adjourned.

TABULATED STATEMENT
OF THE
CUSTOMARY ALLOWANCES BY WAY OF COMPENSATION
ADOPTED IN TWENTY-EIGHT COUNTIES.

BY

G. C. PHILLIPS

(Professional Associate of The Surveyors' Institution).

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by MESSRS. VOELCKER & HALL, and published in

FEEDING STUFFS.		1. DECORTICATED COTTON CAKE.			2. UNDECORTICATED COTTON CAKE.			
Manurial Constituents.		Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
	NITROGEN - -	12/-	6.90	82/10	41/5	3.54	42/6	21/3
	$\frac{1}{2}$ to Manure							
	PHOSPHORIC ACID	3/-	3.10	9/4	7/-	2.00	6/-	4/6
	$\frac{3}{4}$ to Manure							
	POTASH - -	4/-	2.00	8/-	8/-	2.00	8/-	8/-
whole to Manure								
Compensation		Last year (no crop taken)			2 16 5	no crop		1 13 9
Value for each		1 year before last (1 crop taken)			1 8 2	1 "		16 10
ton of food		2 years " " (2 crops taken)			14 1	2 crops		8 5
consumed.		3 " " " (3 crops taken)			7 0	3 "		4 2

Compared with Lawes and Gilbert's

		Total Value.	Value to Manure.	Total Value.	Value to Manure.		
NITROGEN	- - -	} Half to Manure.	58/1	29/-	32/7	16/4	
PHOSPHORIC ACID	- - -		11/1	5/7	7/1	3/6	
POTASH	- - -		5/7	2/9	5/7	2/9	
			3 14 9		2 5 3		
Compensation.		Last year (no crop taken)		1 17 4	no crop		1 2 7
Value for each		(deduct $\frac{1}{2}$ each succeeding year)					
ton of food		1 year before last (1 crop taken)		1 4 11	1 "		15 1
consumed.		2 years " " (2 crops taken)		16 7	2 crops		10 1
		3 " " " (3 crops taken)		11 1	3 "		6 9

N.B.—These Tables extend to 8 years

Compared with the Scale adopted by the

Compensation Value for each ton of food consumed	Last year (no crop taken)	2 16 0	no crop	1 14 0
	1 year before last (1 crop taken)	1 8 0	1 "	17 0
	2 years " " (2 crops taken)	14 0	2 crops	8 6

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a uniform standard of one ton.	January 1, 1907	7 10 0	5 5 0
	April 1 "	7 10 0	5 5 0
	July 1 "	7 10 0	5 5 0
	October 1 "	7 10 0	5 5 0

VARIOUS FEEDING STUFFS according to the Compensation Table
Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

3. LINSEED CAKE.		4. LINSEED.			5. PALM NUT CAKE.			NITROGEN $\frac{1}{3}$ to Manure. PHOSPH. ACID $\frac{3}{4}$ to Manure. POTASH whole to Manure.
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	
57/-	28/6	3.60	43/2	21/7	2.50	30/-	15/-	
6/-	4/6	1.54	4/7	3/5	1.20	3/7	2/8	
5/7	5/7	1.37	5/6	5/6	.50	2/-	2/-	
no crop	<u>1 18 7</u>	no crop	<u>1 10 6</u>	no crop	<u>19 8</u>			
„	<u>19 3</u>	1 „	<u>15 3</u>	1 „	<u>9 10</u>			
crops	<u>9 7</u>	2 crops	<u>7 7</u>	2 crops	<u>4 11</u>			
„	<u>4 9</u>	3 „	<u>3 9</u>	3 „	<u>2 5</u>			

ables, as revised by them in 1897.

Total Value.	Value to Manure.	Total Value.	Value to Manure.	Total Value.	Value to Manure.	NITROGEN. PHOSPH. ACID. POTASH.
41/2	20/7	30/4	15/2	21/-	10/6	
6/11	3/6	5/1	2/7	4/-	2/-	
3/10	1/11	3/9	1/10	1/4	-/8	
<u>2 11 11</u>		<u>1 19 2</u>		<u>1 6 4</u>		
no crop	<u>1 6 0</u>	no crop	<u>19 7</u>	no crop	<u>13 2</u>	<i>Omitted by V. & H.</i>
1 "	<u>17 4</u>	1 "	<u>13 1</u>	1 "	<u>8 9</u>	Coarse Pollard 19 1 (a)
2 crops	<u>11 7</u>	2 crops	<u>8 9</u>	2 crops	<u>5 10</u>	Carrots 13 9 (b)
3 "	<u>7 9</u>	3 "	<u>5 10</u>	3 "	<u>3 11</u>	<i>Nearest Values.</i>
						(a) Linseed 19 7
						(b) Palm Nut
						Cake 13 2

L & C.

acting $\frac{1}{3}$ for each previous year.

Central Chamber of Agriculture, January, 1903.

no crop	<u>1 18 0</u>	no crop	<u>1 10 0</u>	no crop	<u>1 0 0</u>
1 "	<u>19 0</u>	1 "	<u>15 0</u>	1 "	<u>10 0</u>
2 crops	<u>9 6</u>	2 crops	<u>7 6</u>	2 crops	<u>5 0</u>

May 1, October 1, 1907. (Obtained from the *Mark Lane Express*.)

<u>8 0 0</u>	<u>12 7 0</u>	not given
<u>8 0 0</u>	<u>12 7 0</u>	
<u>8 0 0</u>	<u>12 7 0</u>	
<u>8 0 0</u>	<u>12 7 0</u>	<u>6 5 0</u>

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by Messrs. VOELCKER & HALL, and published in

FEEDING STUFFS.		6. COCOA-NUT CAKE.				7. RAPE CAKE.		
Manurial Constituents		Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
	NITROGEN - - -	12/-	3·40	40/10	20/5	4·90	58/10	29/5
	$\frac{1}{2}$ to Manure							
	PHOSPHORIC ACID	3/-	1·40	4/2	3/1	2·50	7/6	5/8
	$\frac{2}{3}$ to Manure							
	POTASH - - -	4/-	2·00	8/-	8/-	1·50	6/-	6/-
	whole to Manure							
	Compensation	Last year (no crop taken)				no crop		
	Value for each	1 year before last (1 crop taken)				1 "		
	ton of food	2 years " " (2 crops taken)				2 crops		
	consumed.	3 years " " (3 crops taken)				3 "		

Compared with Lawes and Gilbert's

		Total Value.	Value to Manure.	Total Value.	Value to Manure.	
NITROGEN	- - -	Half to Manure.	29/ 5	14/9	43/3	21/8
PHOSPHORIC ACID	- - -		4/10	2/5	9/-	4/6
POTASH	- - -		5/7	2/9	4/2	2/1
			<u>1 19 10</u>		<u>2 16 5</u>	
Compensation		Last year (no crop taken) (deduct $\frac{1}{3}$ each succeeding year) 1 year before last (1 crop taken) 2 years " " (2 crops taken) 3 " " " (3 crops taken)	<u>19 11</u>		no crop	<u>1 8 3</u>
Value for each			13 3		1 "	18 10
ton of food			<u>8 10</u>		2 crops	<u>12 7</u>
consumed.			5 11		3 "	8 5

N.B.—These Tables extend to 8 years

Compared with the Scale adopted by the

Compensation	Half to Manure.	Last year (no crop taken)		1 10 0	no crop	2 0 0
Value for each		1 year before last (1 crop taken)		15 0	1 "	1 0 0
ton of food		2 years " " (2 crops taken)		7 6	2 crops	10 0
consumed.						

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a	Half to Manure.	January 1, 1907				not given
uniform standard of one ton.		April 1 "		not given		
		July 1 "				5 5 0
		October 1 "				5 5 0

COUS FEEDING STUFFS according to the Compensation Table
Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

8. BEANS.		9. PEAS.		10. WHEAT.			
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
48/-	24/-	3.60	43/2	21/7	1.80	21/7	10/9
3/4	2/6	.85	2/7	1/11	.85	2/7	2/-
5/2	5/2	.96	3/10	3/10	.53	2/1	2/1
crop	1 11 8	no crop	1 7 4	no crop	14 10		
"	15 10	1 "	13 8	1 "	7 5		
crops	7 11	2 crops	6 10	2 crops	3 8		
"	3 11	3 "	3 5	3 "	1 10		

NITROGEN
 $\frac{1}{2}$ to Manure.
PHOSPH. ACID
 $\frac{3}{4}$ to Manure.
POTASH
whole to Manure.

es, as revised by them in 1897.

Total Value.	Value to Manure.	Total Value.	Value to Manure.	Total Value.	Value to Manure.		
34/8	17/4	31/-	15/6	14/9	7/5	NITROGEN. PHOSPH. ACID. POTASH. <i>Omitted by V. & H.</i> Lentils 1 0 4 Tare Seed 1 0 7 (a) Potatoes 1 0 5 Parsnips 17 6 Pine Pollard 17 7 (b) } <i>Li</i>	
3/8	1/10	2/9	1/5	2/9	1/5		
3/7	1/9	2/8	1/4	1/5	8		
22 1 11		1 16 5		18 11			
no crop	1 0 11	no crop	18 3	no crop	9 6	<i>Nearest Values.</i> (a) Beans 1 0 11 (b) Peas 18 3	
1 "	13 11	1 "	12 2	1 "	6 4		
2 "	9 3	2 crops	8 1	2 crops	4 3		
3 "	6 2	3 "	5 5	3 "	2 10		

ing $\frac{1}{3}$ for each previous year.

ral Chamber of Agriculture, January, 1903.

no crop	1 10 0	no crop	1 10 0	no crop	14 0
1 "	15 0	1 "	15 0	1 "	7 0
2 crops	7 6	2 crops	7 6	2 crops	3 6

1, October 1, 1907. (Obtained from the *Mark Lane Express*.)

6 17 0	7 2 0	7 5 0
7 2 0	7 6 0	7 11 0
8 0 0	7 6 0	9 4 0
8 8 0	8 0 0	9 16 0

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by Messrs. VOELCKER & HALL, and published in

FEEDING STUFFS.				11. BARLEY.		12. OATS.			
Manurial Constituents.		Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	
	NITROGEN - -	12/-	1.65	19/10	9/11	2.00	24/-	12/-	
	$\frac{1}{5}$ to Manure PHOSPHORIC ACID	3/-	.75	2/3	1/8	.60	1/10	1/5	
	$\frac{3}{4}$ to Manure POTASH - -	4/-	.55	2/2	2/2	.50	2/-	2/-	
	whole to Manure								
Compensation				(no crop taken)		13 9		no crop	15 5
Value for each				1 year before last (1 crop taken)		6 10		1 "	7 8
ton of food				2 years " " (2 crops taken)		3 5		2 crops	3 10
consumed.				3 years " " (3 crops taken)		1 8		3 "	1 11

Compared with Lawes and Gilbert's

				Total Value.	Value to Manure.	Total Value.	Value to Manure.	
NITROGEN	-	-	-	} Half to Manure.	13/4	6/8	16/7	8/4
PHOSPHORIC ACID	-	-	-		2/4	1/2	1/10	-/11
POTASH	-	-	-		1/6	-/9	1/4	-/8
				17 2		19 9		
Compensation				Last year	(no crop taken)	8 7	no crop	9 11
Value for each				(deduct ¼ each succeeding year)		5 9	1 "	6 7
ton of food				1 year before last (1 crop taken)		3 10	2 crops	4 5
consumed.				2 years " " (2 crops taken)		2 7	3 "	2 11
				3 " " " (3 crops taken)				

N.B.—These Tables extend to 8 years

Compared with the Scale adopted by the

Compensation				(no crop taken)		14 0		no crop	14 0
Value for each				1 year before last (1 crop taken)		7 0		1 "	7 0
ton of food				2 years " " (2 crops taken)		3 6		2 crops	3 6
consumed.									

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a				January 1, 1907	7 0 0		6 9 0
uniform standard of one ton.				April 1 "	6 14 0		6 16 0
				July 1 "	7 16 0		7 3 0
				October 1 "	7 5 0		6 9 0

OUS FEEDING STUFFS according to the Compensation Table
Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

13. MAIZE.		14. RICE MEAL.			15. LOCUST BEANS.			
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	NITROGEN $\frac{1}{2}$ to Manure. PHOSPH. ACID $\frac{3}{4}$ to Manure. POTASH whole to Manure.
20/5	10/2	1.90	22/10	11/5	1.20	14/5	7/2	
1/9	1/4	.60	1/9	1/4	.80	2/5	1/10	
1/6	1/6	.37	1/6	1/6	.80	3/2	3/2	
crop	13 0	no crop	14 3	no crop	12 2			
"	6 6	1 "	7 1	1 "				
crops	3 3	2 crops	3 6	2 crops				
"	1 7	3 "	1 9	3 "				

es, as revised by them in 1897.

Total Value.	Value to Manure.		Total Value.	Value to Manure.		Total Value.	Value to Manure.	
13/10	6/11		15/8	7/10		not	given	
1/9	-/11		1/10	-/11				NITROGEN. PHOSPH. ACID. POTASH.
1/	-/6		1/-	-/6				
16 7			18 6					
no crop	8 4		no crop	9 3		no crop		
1 "	5 7		1 "	6 2		1 "		
2 crops	3 9		2 crops	4 1		2 crops		
3 "	2 6		3 "	2 9		3 "		

ing $\frac{1}{3}$ for each previous year.

ral Chamber of Agriculture, January, 1903.

no crop	14 0		no crop	14 0		no crop	12 0
1 "	7 0		1 "	7 0		1 "	6 0
2 crops	3 6		2 crops	3 6		2 crops	3 0

1, October 1, 1907. (Obtained from the *Mark Lane Express*.)

6 8 0			4 15 0			5 10 0
6 3 0			4 16 0			5 5 0
6 8 0			4 17 0			5 5 0
7 11 0			5 0 0			5 10 0

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by Messrs. VOELCKER & HALL, and published in

FEEDING STUFFS.		16. MALT.				17. MALT CULMS.		
Manurial Constituents.		Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
NITROGEN	- - -	12/-	1·82	21/10	10/11	3·90	46/10	23/5
$\frac{1}{2}$ to Manure								
PHOSPHORIC ACID	- - -	3/-	·80	2/5	1/10	2·00	6/-	4/6
$\frac{3}{4}$ to Manure								
POTASH	- - -	4/-	·60	2/5	2/5	2·00	8/-	8/-
whole to Manure								
Compensation	Last year	(no crop taken)				no crop		1 15 11
Value for each	1 year before last	(1 crop taken)				1 "		17 11
ton of food	2 years "	" (2 crops taken)				2 crops		8 11
consumed.	3 " "	" (3 crops taken)				3 "		4 5

Compared with Lawes and Gilbert's

		Total Value.	Value to Manure.	Total Value.	Value to Manure.	
NITROGEN	- - - -	Half to Manure.	13/9	6/11	33/11	16/11
PHOSPHORIC ACID	- - - -		2/6	1/3	7/1	3/7
POTASH	- - - -		1/4	-/8	5/7	2/9
			17·7		2 6 7	
Compensation Value for each ton of food consumed.	Last year	(no crop taken)	8 10	no crop	1 3 3	
	(deduct $\frac{1}{2}$ each succeeding year)					
	1 year before last	(1 crop taken)	5 11	1 "	15 6	
	2 years	" (2 crops taken)	3 11	2 crops	10 4	
	3 "	" (3 " "	2 7	3 "	6 11	

N.B.—These tables extend to 8 years

Compared with the Scale adopted by the

Compensation	Last year	(no crop taken)	14 0	no crop	1 16 0
Value for each	1 year before	(1 crop taken)	7 0	1 "	18 0
ton of food	2 years before	(2 crops taken)	3 6	2 crops	9 0
consumed					

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a uniform standard of one ton.	January 1, 1907	11 6 0	4 10 0
	April 1 "	11 13 0	4 10 0
	July 1 "	12 6 0	4 10 0
	October 1 "	12 6 0	4 15 0

OUS FEEDING STUFFS according to the Compensation Table
 Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

18. STRAN.		19. BREWERS' GRAINS. (Dried)			20. BREWERS' GRAINS. (Wet)			NITROGEN $\frac{1}{2}$ to Manure. PHOSPH. ACID $\frac{3}{4}$ to Manure. POTASH whole to Manure.
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	
30/-	15/-	3.30	39/7	19/9	.81	9/9	4/11	
10/10	8/2	1.61	4/10	3/8	.42	1/3	-/11	
5/9	5/9	.20	-/10	-/10	.05	-/2	-/2	
crop	1 8 11	no crop	1 4 3	no crop			6 0	
"	14 5	1 "	12 1	1 "			3 0	
crops	7 2	2 crops	6 0	2 crops			1 6	
"	3 7	3 "	3 0	3 "			9	

as revised by them in 1897.

Total Value.	Value to Manure.	Total Value.	Value to Manure.	Total Value.	Value to Manure.	NITROGEN. PHOSPH. ACID. POTASH.
21/5	10/9	not	given	not	given	
13/1	6/6					
4/-	2/-					
18 6						
crop	19 3					
"	12 10					
crops	8 7					
"	5 9					

g $\frac{1}{3}$ for each previous year.

Chamber of Agriculture, January, 1903.

crop	1 10 0	no crop	1 4 0	not	given
"	15 0	1 "	12 0		
crops	7 6	2 crops	6 0		

, October 1, 1907. (Obtained from the *Mark Lane Express*.)

5 0 0	5 0 0	18 0
5 0 0	5 0 0	19 0
5 0 0	5 0 0	19 0
5 5 0	5 5 0	1 0 0

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by Messrs. VOELCKER & HALL, and published in

FEEDING STUFFS.				21 CLOVER HAY.		22 MEADOW HAY.				
Manurial Constituents.			Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	
	NITROGEN	-	-	12/-	2.40	28/10	14/5	1.50	18/-	9/-
	$\frac{1}{2}$ to Manure									
	PHOSPHORIC ACID			3/-	.57	1/9	1/4	.40	1/2	-.11
	$\frac{3}{4}$ to Manure									
	POTASH	-	-	4/-	1.50	6/-	6/-	1.60	6/5	6/5
	Whole to Manure									
	Compensation	Last year (no crop taken)				1 1 9	no crop		16 4	
	Value for each	1 year before last (1 crop taken)				10 10	1 "		8 2	
	ton of food	2 years " " (2 crops taken)				5 5	2 crops		4 1	
	consumed.	3 years " " (3 crops taken)				2 8	3 "		2 0	

Compared with Lawes and Gilbert's

	Total Value.	Value to Manure.	Total Value.	Value to Manure.	
NITROGEN - - - - }	20/11	7/-	12/10	4/3	
PHOSPHORIC ACID - - - }	1/11	-8	1/ 3	-5	
POTASH - - - - }	4/2	1/4	4/ 6	1/6	
	1 7 0		18 7		
Compensation	Last year (no crop taken)		9 0	no crop	6 2
Value for each	(deduct $\frac{1}{2}$ each succeeding year)				
ton of food	1 year before last (1 crop taken)		7 2	1 "	4 11
consumed.	2 years " " (2 crops taken)		5 9	2 crops	3 11
	3 years " " (3 crops taken)		4 7	3 "	3 2

N.B. These Tables extend to 8 years

Compared with the Scale adopted by the

Compensation	Last year (no crop taken)		1 0 0	no crop	15 0
Value for each	1 year before last (1 crop taken)		10 0	1 "	7 6
ton of food	2 years " " (2 crops taken)		0 0	2 crops	0 0
consumed.					

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a uniform standard of one ton.	January 1, 1907	4 8 0	4 0 0
	April 1 "	4 12 0	4 10 0
	July 1 "	4 10 0	4 5 0
	October 1 "	4 10 0	3 17 0

OUS FEEDING STUFFS according to the Compensation Table
Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

23. WHEAT STRAW.			24. BARLEY STRAW.			25 OAT STRAW.		
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	
5/5	2/8	·40	4/10	2/5	·50	6/-	3/	
-/9	-/7	·18	-/6	-/4	·24	-/9	/7	
3/2	3/2	1·00	4/-	4/-	1·00	4/-	4/-	
NITROGEN $\frac{1}{2}$ to Manure. PHOSPH. ACID $\frac{3}{4}$ to Manure. POTASH whole to Manure.								
crop	6 5	no crop	6 9	no crop	7 7			
"	3 2	1 "	3 4	1 "	3 9			
crops	1 7	2 crops	1 8	2 crops	1 10			
"	9	3 "	10	3 "	11			

es, as revised by them in 1897.

Total Value.	Value to Manure.	Total Value.	Value to Manure.	Total Value.	Value to Manure.	NITROGEN PHOSPH. ACID POTASH <i>Omitted by V. & H.</i> Bean Straw 3 10 } (a) Pea Straw 4 1 } <i>Nearest Value.</i> (a) Double Wheat Straw 4 4 } L & C.
3/6	1/2	3/2	1/1	3/11	1/4	
-/9	-/3	-/6	-/2	-/9	-/3	
2/3	-/9	2/9	-/11	2/9	-/11	
6 6		6 5		7 5		
no crop	2 2	no crop	2 2	no crop	2 6	
1 "	1 9	1 "	1 9	1 "	2 0	
2 crops	1 5	2 crops	1 5	2 crops	1 7	
3 "	1 2	3 "	1 2	3 "	1 3	

ing $\frac{1}{2}$ for each previous year.

al Chamber of Agriculture, January, 1903.

no crop	7 0	no crop	7 0	no crop	7 0
1 "	4 0	1 "	4 0	1 "	4 0
2 crops	0 0	2 crops	0 0	2 crops	0 0

1, October 1, 1907. (Obtained from the *Mark Lane Express*.)

2 4 0	2 3 0	2 4 0
2 6 0	2 4 0	2 6 0
2 8 0	2 4 0	2 8 0
2 4 0	2 3 0	2 4 0

The FULL (THEORETICAL) EQUIVALENT MANURIAL VALUES OF
calculated by Messrs. VOELCKER & HALL, and published in

FEEDING STUFFS.			26. MANGELS.			27. SWEDES.		
Manurial Constituents.		Value per Unit.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
	NITROGEN - - -	12/-	·22	2/8	1/4	·25	3/-	1/6
	$\frac{1}{2}$ to Manure							
	PHOSPHORIC ACID	3/-	·07	-/3	-/2	·06	-/2	-/1
	$\frac{3}{4}$ to Manure							
	POTASH - - -	4/-	·40	1/7	1/7	·22	-/11	-/11
	whole to Manure							
Compensation		Last year (no crop taken)			3 1	no crop		2 6
Value for each		1 year before last (1 crop taken)			1 6	1 "		1 3
ton of food		2 years " " (2 crops taken)			9	2 crops		7
consumed.		3 years " " (3 crops taken)			4	3 "		3

Compared with Lawes and Gilbert's

		Total Value.	Value to Manure.	Total Value.	Value to Manure.	
NITROGEN -	- - -	Half to Manure.	1/10	-/11	2/2	1/1
PHOSPHORIC ACID -	- - -		-/3	-/2	-/2	-/1
POTASH -	- - -		1/1	-/6	-/7	-/4
			3 2		2 11	
Compensation Value for each ton of food consumed.	{	Last year (no crop taken)	1 7	no crop	1 6	
		(deduct $\frac{1}{3}$ each succeeding year)		1 "	1 0	
		1 year before last (1 crop taken)	1 1	2 crops	8	
		2 years " " (2 crops taken)	9	3 "	5	
		3 " " (3 crops taken)	6			

N.B.—These Tables extend to 8 years

Compared with the Scale adopted by the

Compensation Value for each ton of food consumed.	Last year	(no crop taken)	2 6	no crop	2 6
	1 year before	(1 crop taken)	1 6	1 "	1 6
	2 years before	(2 crops taken)	0 0	2 crops	0 0

Compared with Cost Prices per ton January 1, April 1,

Quotations brought to a uniform standard of one ton.	January 1, 1907	12 0	16 0
	April 1 "	14 0	18 0
	July 1 "	16 0	1 0 0
	October 1 "	14 0	18 0

US FEEDING STUFFS according to the Compensation Table
 Royal Agricultural Society's Journal, 1902 (re-arranged by G. C. P.).

28. TURNIPS.							
Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.	Units in Food.	Total Value.	Value to Manure.
2/2	1/1						
-/2	-/1						
1/2	1/2						
crop	2 4	no crop			no crop		
"	1 2	1 "			1 "		
2 crops	7	2 crops			2 crops		
"	3	3 "			3 "		

NITROGEN
 $\frac{1}{2}$ to Manure.
PHOSPH. ACID
 $\frac{2}{3}$ to Manure.
POTASH
 whole to Manure.

, as revised by them in 1897.

Total Value.	Value to Manure.	Total Value.	Value to Manure.	Total Value.	Value to Manure.
11/7	-/10				
-/2	-/1				
-/10	-/5				
2 7					
crop	1 4	no crop		no crop	
"	11	1 "		1 "	
2 crops	8	2 crops		2 crops	
"	5	3 "		3 "	

NITROGEN.
PHOSPH. ACID.
POTASH.

g $\frac{1}{8}$ for each previous year.

1 Chamber of Agriculture, January, 1903.

crop	2 6	no crop		no crop	
"	1 6	1 "		1 "	
2 crops	0 0	2 crops		2 crops	

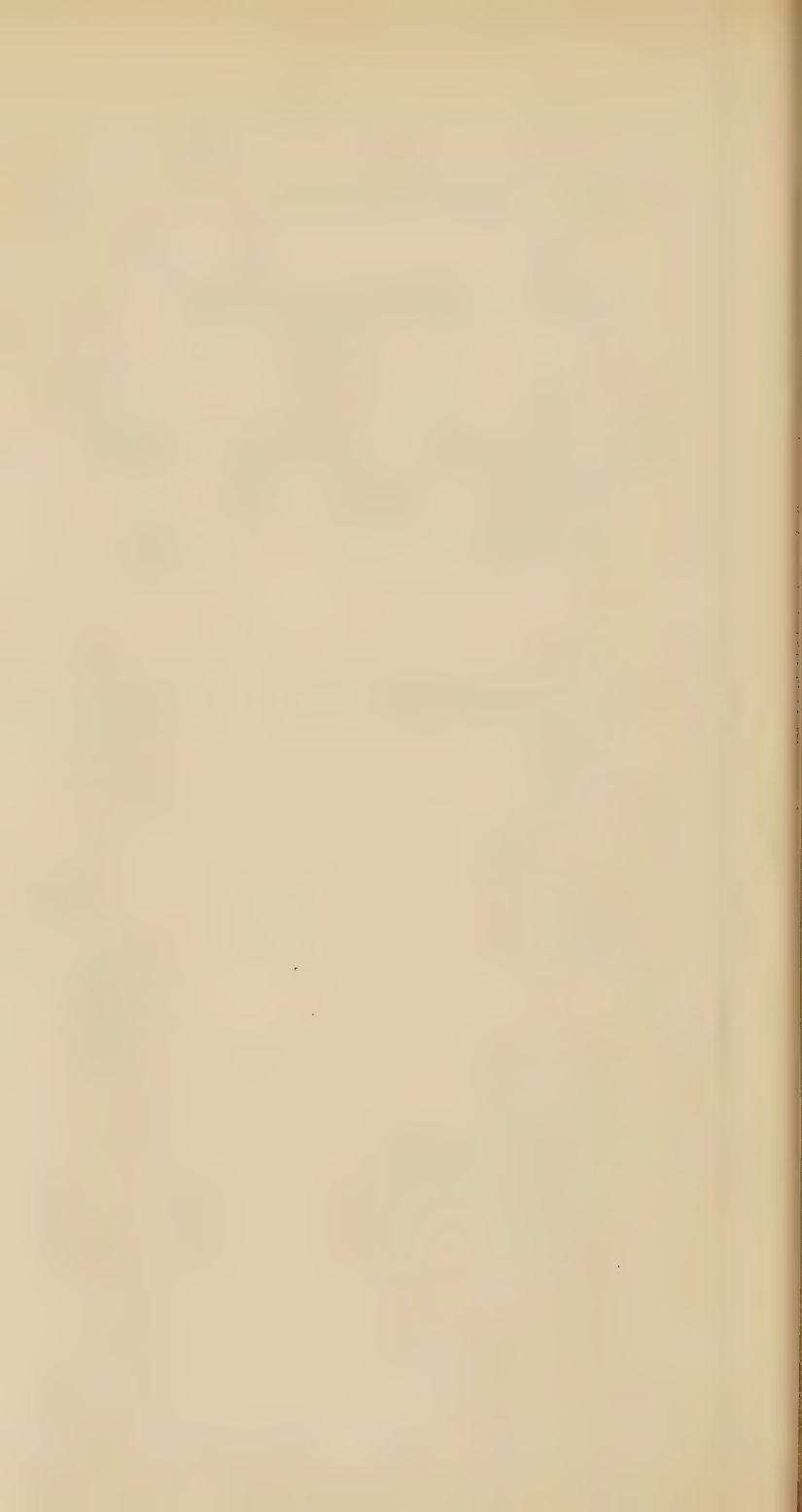
October 1, 1907. (Obtained from the *Mark Lane Express*.)

12 0					
14 0					
16 0					
14 0					

STATEMENT OF CUSTOMARY ALLOWANCES FOR CAKE AND OTHER FEEDING STUFFS MADE BY VALUERS IN THE UNDER-MENTIONED COUNTIES AND DISTRICTS.

(Taken from the Estates Gazette Diary for 1908.)

FEEDING STUFFS.	Cost Price per ton, Oct. 1907.	Beds.	Berks.	Bucks.	Cambs.	Cheshire.	Derby.	Essex.	Hants.	Herts.	Hunts.	Kent.	Lancs.	Leicester and Rutland.	Lincoln.	Mddlsx.	Norfolk.	Northamp- ton.	Notts.	Oxon.	Shrops.	Stafford.	Suffolk.	Surrey.	Sussex.	Warwick.	Wilts.	Worcester.	York. N. & E.
1. Decort. Cotton Cake ... 2. Undecort. " ... 3. Linseed Cake ... 4. Linseed ... 5. Palm Nut Cake ... 6. Cocoa Nut Cake ... 7. Rape Cake ...	£ s. d. 7 10 0 5 5 0 8 0 0 12 7 0 6 5 0 — 5 5 0	Voelcker & Hall's Tables.	Cake and other feeding stuffs. Last year before $\frac{1}{3}$ or $\frac{1}{4}$ $\frac{1}{6}$ or $\frac{1}{8}$	Cake fed on grass crops $\frac{1}{2}$ In north Cake and Beans. Last year before $\frac{1}{3}$ $\frac{1}{6}$	Lawes & Gilbert's Tables, limited to 2 years and restricted to average of last 3 years.	Lawes & Gilbert's Tables, limited to 2 years and restricted to average of last 3 years.	Cake. Last year before. $\frac{1}{4}$ $\frac{1}{8}$	No formal scale, but following has been in use, viz., all feed- ing stuffs.	Scale of Central Chamber of Agri- culture.	Linseed Cake. average value £2 2 0	Cake. Last year $\frac{1}{3}$ If cost does not exceed that of pre- vious year $\frac{1}{2}$	Lawes & Gilbert's Tables, with 2 years' limit, subject to average of last 3 years.	Lawes & Gilbert's Tables being adopted limited to last 2 years.	Cake last 2 years. $\frac{1}{4}$	Cakes. Linseed, cotton, and rape, and malt culms. Last year before $\frac{1}{3}$ $\frac{1}{6}$	No Scale of customary allowances.	Scale of Central Chamber of Agri- culture.	Cake. Last 2 years. $\frac{1}{4}$	Cakes. Peas and beans, malt and malt dust, and such like Last year before $\frac{1}{4}$ $\frac{1}{8}$	Cake and other feeding stuffs. Last year before $\frac{1}{3}$ $\frac{1}{6}$	Cakes. Linseed, cotton, and rape, Last year before $\frac{1}{3}$ $\frac{1}{6}$	Cake. Last year before $\frac{1}{3}$ $\frac{1}{6}$	Cakes. Meals, beans, and peas $\frac{1}{3}$ Last year only.	Cake. Peas, beans, malt, or malt dust, and such like. Last year before $\frac{1}{3}$ $\frac{1}{6}$	Lawes & Gilbert's Tables, with 2 years' limit.	Cake. Last 2 years. $\frac{1}{4}$	Scale of Central Chamber of Agri- culture.	Cakes. Last year before $\frac{1}{3}$ $\frac{1}{6}$	Linseed and cotton, or meal and rape cake, where manure belongs to tenant. $\frac{1}{4}$ $\frac{1}{8}$
8. Beans ... 9. Peas ... 10. Wheat ... 11. Barley ... 12. Oats ... 13. Maize ...	8 8 0 8 0 0 9 16 0 7 5 0 6 9 0 7 11 0																												
14. Rice Meal ... 15. Locust Beans ... 16. Malt ... 17. Malt Culms ... 18. Bran ... 19. Brewers' Grains, Dry ... 20. " Wet ...	5 0 0 5 10 0 12 6 0 4 15 0 5 5 0 5 5 0 1 0 0																												
21. Clover Hay ... 22. Meadow Hay ... 23. Wheat Straw ... 24. Barley Straw ... 25. Oat Straw ... 26. Mangels ... 27. Swedes ... 28. Turnips ...	4 10 0 3 17 0 2 4 0 2 3 0 2 4 0 14 0 18 0 14 0																												
			Tendency to adopt Voelcker & Hall's Tables.	Voelcker & Hall's Tables, with modifications.		Manufactured Feed- ing Stuffs (corn, linseed, and pulse). Last year before $\frac{1}{6}$ $\frac{1}{12}$	Other corn and corn cake. $\frac{1}{8}$ $\frac{1}{16}$	Other corn and corn cake. $\frac{1}{8}$ $\frac{1}{16}$	Other corn and corn cake. $\frac{1}{8}$ $\frac{1}{16}$	Voelcker & Hall's Tables, introduced, and probably will be generally adopted, but variable according to management of farm.	Voelcker & Hall's Tables, introduced, and probably will be generally adopted, but variable according to management of farm.	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$	Second Class. $\frac{1}{2}$ $\frac{1}{4}$
					See Kent and Sussex.				See Norfolk and Wilts.			See Cheshire and Sussex		York, West, same as above.		See Hants and Wilts						See Worcester.		See Cheshire and Kent		See Hants. and Norfolk.	See Stafford		York, West, same as Lincoln.



FORESHORE EROSION AND RECLAMATION.

BY PROFESSOR HENRY ROBINSON, FELLOW.

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION held on Monday, January 13th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

As many Members of The Surveyors' Institution are directly or indirectly connected professionally with land adjoining the sea, a brief reference to the subject of foreshore erosion and reclamation may be of service at this time, especially in view of the fact that the matter has at last received attention from the Government, who in 1906 appointed a Royal Commission to investigate the subject.

It is a matter of urgent and national importance, and it is to be hoped that any recommendations of the Royal Commission may be dealt with promptly by the Government, and not, as is too often the case, be pigeon-holed for years.

Many cases were brought before the Commission to show the necessity for taking action promptly to arrest the mischief which has been going on around our coasts. It was stated that at Pakefield near

Lowestoft, a concrete protective wall, which was erected in 1884, was washed down in 1895, and that subsequently groynes had been laid down, some of which had stood whilst others had failed. If the erosion which was going on at Pakefield was not arrested, a main road would soon be reached.

The maritime trade of the port of Exeter through its ship canal was stated to be now threatened, unless the bar of land at the mouth of the estuary, known as the Warren, were protected. If this were not done, the port of Topsham and neighbouring places, including Exmouth, would be imperilled.

In October, 1907, the first report of the Commission was issued. This consisted merely of the evidence that had then been given which in many cases may be found useful for reference. It is to be hoped that the result will be the formation of a State Department empowered to deal with erosion, and to recommend and assist in carrying out remedial or preventive works as well as to obtain and record data relating to currents, soundings, changes of foreshore, &c., round our coasts. Such observations being taken frequently, deductions therefrom could be promptly made. Those engaged on hydrographical surveys for the Admiralty would obviously be the best men for this work, but their numbers must of course be increased.

The State Department should have power to equitably divide the cost of the protective works between the county or district councils and the owners of the land abutting on the foreshore to be dealt with. If adjoining authorities or persons would be benefited, they should also contribute.

I am of opinion that if a State Department had the powers vested in it that are suggested, the solution of

the question of foreshore erosion and protection would be far less difficult from an engineering point of view than it may appear to be, and from a financial standpoint I feel confident that the communities now affected, or threatened, would reap pecuniary advantages.

The cost of protective works would be adjudicated upon by the proposed Department, and need not be met altogether by a Treasury grant. The Local Authority, and the owners of land benefited by the protective works, might be required to contribute towards the cost, there being no legal or other obligation on a person or an authority to expend money to protect coasts for the benefit of the community. At the present time the Treasury makes grants in respect of new works, or of improvements to harbours used for refuge or fishery purposes, the amount being limited to one-third of the outlay on such works. In Holland and Belgium the Governments of both countries carry out and maintain the groynes and sea walls which are required for the protection of their coasts, such being regarded as a matter of national concern.

Crown rights and obligations.—The first Statute of Sewers of Henry VI. states “that there is an obligation “on the part of the Crown to protect the Kingdom of “England on every side from the inundation of the “water,” and a subsequent Statute of Sewers of the reign of Henry VIII. recites: “For that by reason of “our dignity and prerogative Royal we be bound to “provide for the safety and preservation of our Realm “of England.”

It may be useful to record that in 1879, Lord Justice Fry (in the case of *Attorney General v. Tomlin*) held that there was a prerogative and duty in the Crown to protect land from the inundation of the water for the

benefit of the commonwealth. That view was upheld by all the judges when the case came before the Court of Appeal. Lord Justice Brett, in his Judgment in the Court of Appeal, said: "I confess that, to my mind, that "is a duty of what is called imperfect obligation "I know no legal means, that is no process of law— "common law or statute law—by which the Crown could "be enforced to perform that duty; but inasmuch "as the duty of the King seems to me to be a duty of "imperfect obligation, the right of the subject is also an "imperfect right." Landowners cannot be expected to incur the cost involved in carrying out protective works for land which has merely an agricultural value, and has not been developed for building and similar purposes. If agricultural land has to be preserved to prevent injury to adjoining property, the State, or the public bodies whose interests are prejudicially affected, must bear the burden. The loss of foreshore on the east coast has led in some cases to the destruction of villages which existed in olden times, but over the sites of which there are now several fathoms of sea.

It would be beyond the scope of this Paper to deal with the subject (interesting though it is) of the nature and the causes of the variations in shore lines during geological ages. Even to confine this Paper to the foreshore erosion that has gone on unchecked in recent years, and its prevention, is a matter of some difficulty. Attention has generally been confined to the *visible* effect of storms on our coasts, while the consideration of what is known as deep sea erosion, or erosion below low water level, has been too much neglected. It is essential, however, that this important part of the subject should be studied, for many works carried out to protect the visible foreshore above low water will probably in the course

of time be undermined by erosion in deep water at some distance from the place where such protective works have been executed. The efforts to remedy the evil of erosion have been too often confined to the changes visible on the foreshore between high and low water, disregarding what occurs below. Many examples of this can be given. At Peterhead breakwater, where the rise of the spring tides does not exceed 11 feet, it was found during a storm in 1898 that blocks weighing more than 40 tons were displaced at a level of 37 feet below low water spring tides. At Land's End, lobster creels lying in 20 to 30 fathoms of water were found, after a heavy gale, to be filled with sand and shingle, some stones weighing a pound.

That waves act on the material at the bottom of the sea at depths of 30 or even 40 fathoms is proved by the attachment to the material at those depths of deep seaweed (*Laminaria Digitata*, &c.) which assists the sea in disturbing the sea-bed, and conveying it towards the shore with a corresponding increase in the depth of the sea landwards.

The effect of drift in deep waters can be studied where the Admiralty charts, with corrections over long periods, give information as to what changes, either in the form of accretions or the reverse, have occurred along the coast under consideration. The results would serve as a guide to what should be done along the foreshore itself. These Admiralty charts afford data with regard to depths of water for navigation purposes, but not a record of the currents which affect foreshores.

In some parts of the world the change of level of coasts is due either to subsidence or upheaval of the earth's surface, but this is not the case on our own shores where all such changes are due either to accre-

tion or denudation. English charts show that there is practically no variation in the level of the sea bed beyond wave or tidal influence.

Those who are called upon to advise concerning fore-shore protective works must know how tides, waves, and winds, combine to cause erosion or other damage. The coincidence of a high spring tide and an on-shore gale produces the maximum effect. If, however, the prevailing winds be not directly on shore, this fact must be taken into consideration in designing works for the retention and the accumulation of the material that is drifting along the coast, to protect it from erosion, or to recover the foreshore which has been lost for want of such works. It is necessary to observe the range of the tide, the direction and intensity of prevalent and most destructive winds. On the east coast the direction of the drift is from north to south ; on the south coast it is from west to east.

An interesting case is that of the river Dee, where some years ago I was called upon to advise whether the injury to the earthen embankment which protected the low-lying land between the river and the North Western main line to Holyhead, which had been partly wasted away by heavy gales, was likely to continue. On investigating the matter, I found that for several years works near the entrance to the river had deposited slag and other solid waste on the foreshore, making a bank seaward and so narrowing the entrance. Coincident with this, I found from the seafaring men that craft could now enter the river at all tides over a bank (shown on the chart), the depth of water on which had gradually increased. This was due to the ebb tides discharging from the river through a narrower channel than previously. This indicated what had taken place, namely

that, in heavy gales from the north-west and at spring tides, a vastly greater amount of water was hurled against the protective bank that I had to deal with, and I advised the immediate construction of temporary defensive works to prevent, what was imminent, the failure of some part of the bank in the next storm, and the consequent flooding of the low-lying land up to the railway. This was done, and subsequently permanent defensive works were carried out.

The effect of wave action requires careful consideration, as it varies round our coasts. At Dover the highest waves are from 15 to 18 feet from crest to trough, whereas on the north-east coast at the mouth of the Tyne, waves have been recorded from 35 to 40 feet from crest to trough, and at Peterhead (where the Admiralty are making a harbour of refuge) waves of a similar height to those at the Tyne have been recorded.

In addition to the material eroded from cliffs and foreshores, rivers bring down from the land much detritus, part of which forms banks at the mouths of such rivers or estuaries, the rest being carried seaward. Land springs also are sometimes a contributory cause of slips in cliffs, with the resultant increased erosion. The action of underground water flowing from the land seaward has not only led to slips of banks on the foreshore, but also to disturbance of the sea bed in deep water.

The land adjoining a coast is often drained by conveying the rainfall or springs to the nearest part of the cliff, and letting it run down the face of it to the sea. This leads to the breaking up of the cliff, and to consequent slips. Sometimes the drain pipes or channels are carried down the cliff to high-water mark only and not beyond. The flow of this water along the foreshore tends to pre-

vent accretion. It should be carried by culverts to low water.

An instance of injury by land water occurs at Hunstanton. The sandy foreshore has for many years been protected by groynes which have not themselves escaped injury, there being on one occasion, in 1898, a breach of 150 yards in length. But while the groynes to some extent protect the foreshore, the cliffs have lost about nine inches a year, chiefly owing to the action of the land water.

I shall now refer to some of the means that are adopted to retain the littoral drift that passes down our coasts which are now subject to erosion. These sea defence works may be in the form of sea walls, breakwaters, or groynes. A sea wall, either with or without an apron or a rubble wall, will afford protection against the direct attack of the sea. In some cases sea walls have been relied upon as a protection, but although they are often serviceable as promenades at pleasure resorts they do not afford a certain means of preventing erosion. In one case within my experience a sea wall constructed with a vertical face was the cause of increased erosion, as the waves swept down the face, and in a short time cleared away several feet of shingle below the footings of the wall, and if the toe had not been promptly protected, and groynes placed in carefully selected positions to collect the foreshore drift, the wall would have been destroyed, and matters left worse than at the outset. At another place, a sea wall which had been built without proper protection being provided for the backing, ultimately developed serious cracks due to heavy seas passing over the wall and damaging the backing.

Sea walls for the protection of banks can be constructed with an apron, which causes the waves to be

deflected horizontally on to the foreshore instead of passing downwards as in the case referred to above. In some cases blocks of concrete have been placed irregularly in front of a protective wall to act as breakers to the large waves which, during a gale, would have struck the wall with great force and passed over the top of it. The waves on striking the blocks are broken up among the interstices. Banks are often protected by rubble walls, or a timber framing filled with stone, chalk, or other material, giving weight to the structure. If erosion has to be remedied, groynes of suitable design and position will arrest the travelling eroded material and will not only stop further loss of foreshore, but will raise its level by accretion. The position of the littoral drift, which is collected by groynes or similar works on their windward side, interferes with the passage of any part of it to the leeward side. If any does travel it will be carried into deep water as it is washed along the coast past the ends of the groynes and the accumulated material between.

Groynes should be constructed in such a way as to minimise their deterioration or destruction; but consideration has often to be given to the question of cost which may impose a greater burden than the estate can well bear. The groynes may be constructed of timber (alone or with the addition of rubble) or of stone work, or of "reinforced concrete," or they may be "cable groynes." The adoption of one or the other form, their position, number, distances apart, and other essentials can only be determined by a skilful consideration of each case.

The positions of groynes are often fixed without due regard to the conditions that will ensure the accretion of shingle evenly on both sides. If they are placed at

right angles to the coast, an accumulation may take place on one side which will result in heavy seas breaking over that side and denuding the foreshore on the other side causing not only a most unsatisfactory result as regards the foreshore itself, but also in time endangering the stability even of the groynes. I could refer to many such cases.

A well-known instance of the accretion of shingle is along the foreshore between Sandgate and Folkestone where the construction of groynes arrested the travel of the shingle from the west.

Another case is at Hornsea on the north-east coast, where many years ago I laid down a series of groynes to prevent the erosion, then taking place at the rate of at least a foot annually, of a cliff composed of clay. By placing the groynes at the correct angle, and with due regard to the strongest winds and tides, a mass of shingle was accreted along the foreshore at the toe of the bank and seaward, and provided the required protection to the clay cliff.

Whilst parts of our coast lose by erosion, others gain by accretion, but there is a general agreement among those who have studied the question that the value of the land lost by erosion is far greater than of that which is reclaimed by natural accretion. In fact, there are many sea ports round our coast which have deteriorated as ports in consequence of the entrances and channels being injuriously affected by such accretions. The injury thus caused to the port is now, of course, the more serious in view of the increased size of shipping and the consequent greater draught of water required. I have investigated cases where bars at the entrances to tidal rivers leading to important towns whose trade (steadily increasing) depended on sea communication, had to be

removed by costly dredging operations. In two cases the solution of the mischief was possible by straightening the channel inside the entrance.

The reclamation of areas of bights of slob land near the entrance of a river over which the first part of the flood tide is dissipated, results in a larger volume of water passing into the river and reaching a higher part of it. This is discharged at the end of the ebb tide, with a consequent increased scouring effect at the entrance. This increased scouring has often resulted in the littoral drift, which, lodging at the entrances to the rivers formed bars, being carried seaward into deep water and thus contributing to the improvement of the navigable channel.

From an experience extending over many years, I can record the benefits that have accrued to rivers and ports by the reclamation of bights, and the straightening of channels. I may refer to the Humber as an example. Many years ago I had occasion to advise as to the desirability of reclaiming the slob land inside Spurn Point. By comparing old charts with charts of that time, I was able to show that a marked increase in the depth of water in the navigable channel had occurred, coinciding with the period during which the reclamation of the bight of slob land inside the entrance had been slowly progressing by means of stakes and kids. I advocated the reclamation being accomplished more quickly by means of an embankment.

I will now refer to some of the groynes which have been employed. The long low groynes constructed by the late Mr. Case were made of timber, and commenced about mean sea-level, finishing at low water mark. This form of groyne arrested the material travelling between these levels and gradually produced a new line of fore-shore with a sloping surface of repose somewhat in the

form of an ellipse. This type of "low" groyne compares most favourably with the old "high" groyne, which, when adopted under unsuitable circumstances, did not effect what was desired.

Mr. E. T. Beard has devised what he terms a "con-tour system" of groynes, in which a "ramp" divides the groyne into two, one part being higher than the other. The upper part retains the travelling material, while the portion at the lower level allows the drift to pass over it. These are constructed about a foot or two above the beach, and are raised as material accumulates until the desired contour has been established.

As timber is subject to decay through the action of the ship worm, "reinforced concrete" is now coming into vogue, affording as it does much more permanent work.

The chain cable groyne of Mr. Allanson-Winn has for its object the arrest of the material travelling along the coast below low water level, and practically beyond the area of influence of the Case groyne. This groyne consists of a heavy chain cable to which bushes, trees, crates or other material are attached, offering an obstruction (like a hedge) to the passage of drifting seaweed and detritus, which, when thus arrested, form a permanent accretion. The bushes, &c., attached to the chain should in time become embedded in the drifting material, and another series of cable groynes could be placed over or near them, with a further set when these are silted up. Economy is claimed for them, and stress is laid on their being as readily laid in deep as in shallow water.

In arranging works to arrest erosion, or to effect reclamation, a careful study of the coast is essential. What would be suitable for a straight coast would not apply to one with bays or hollow places. In the former

case the drift is carried past the foreshore by flood tides. In the latter, however, no such action can take place, as the projecting portions deflect the drifting material, thus necessitating the utilisation of all local natural means for the protecting of the foreshore.

The removal of shingle, sand, and such materials from foreshores for building, road making, and other purposes is often carried on without due consideration of the consequences. I have had to investigate cases where it was alleged that, at the point where the beach was lowered, by the abstraction of the material composing it, no harm could accrue, but where a very little study of the locality was required to show that the reductions of the level of the foreshore there enabled the sea at high tides and winds to pass over it and attack an adjoining foreshore, doing irreparable injury. It is true that, where material is being removed from a foreshore with injury to the locality, the Board of Trade have power to issue a Prohibitory Order under the Harbours Transfer Act of 1862.

In conclusion, I express the hope that this Paper will be considered to touch upon the main points deserving attention in connection with the subject of foreshore erosion and reclamation.

Mr. HOWARD MARTIN (Vice-President) said he had very much pleasure in acting as the mouthpiece of the Members in moving a very hearty vote of thanks to the writer of the Paper for his treatise on a subject which was not only of great interest to surveyors who acted for owners of estates on the sea coast, but also one of very pressing national importance.

It would not be difficult to add to the examples given by Professor Robinson of injury done by erosion

of the coast. For instance, it was a matter of common knowledge that Southwold was very seriously damaged about two years ago; in fact the very existence of the most valuable part of the town was seriously threatened through the neglect of the local authority to carry out the recommendations of their engineer for defence against the sea.

The Institution was under many obligations to Members of kindred professions for valuable contributions to the *Transactions*, of which this Paper by an engineer was another instance. He only wished that his old friend the late Mr. William Topley of the School of Mines could have been present to give the result of his researches into the subject. It would be remembered that he published, shortly before his death, a very valuable report on the subject, to which, if he had lived, he would no doubt have added many valuable facts. He was, however, glad to see that his colleague, Mr. Whitaker, was present, and would, he hoped, be able to give something of what Mr. Topley would have said had he been still alive.

He was also glad to see present engineers and other experts on coast defence who could contribute to the knowledge of the question. In their presence he would not venture to say a word as to engineering matters, but on one question he should be very interested to hear more, namely the use of reinforced concrete, which he understood when used in the formation of groynes was far more effectual than the old-fashioned heavy blocks.

The facts which Professor Robinson stated with regard to deep water erosion were new to him, and he thought to many others, and he should like to hear whether that deep erosion really was caused by direct action of the waves at depths of 25 or 30 fathoms

Lieutenant Maury, a great authority in his time, he thought he was right in saying, was of opinion that waves exerted no direct influence at a depth which was nearer to five or six fathoms than 25 or 30 fathoms. If that were so, possibly the erosion to which Professor Robinson referred might be caused, not by the direct action of the waves, but by submarine currents, and it would be interesting to hear the views of others who had experience of that question.

As to the greater value of the land lost by erosion or gained by accretion, he knew a very striking instance where, a few years ago, many acres of some of the best land in Sussex, not far west of Worthing, were washed away year after year; and a little further west, between Bognor and Selsey Bill, there were large areas of valueless sand accreted as the result of reclaiming at Pagham Harbour. When he spoke of the land being valueless he referred to the accretion outside the harbour, which consisted almost entirely of sand, not the reclaimed site of the harbour itself, which no doubt was of value.

Mr. R. F. GRANTHAM (Associate) said he rose with much pleasure to second the vote of thanks to Professor Robinson for his Paper, which afforded an opportunity for a discussion which would perhaps lead to the elucidation of some very difficult points.

Although Professor Robinson said he had curtailed his Paper, he was sure it furnished text enough for many sermons of perhaps inordinate length, but he would endeavour to confine his remarks to some of the more salient points.

Reference had been made to Holland and Belgium, in both of which countries the Government carried out and maintained the sea defences required for the protection

of their coast. But he would point out that the circumstances of Holland and Belgium were very different from those existing in this country. Neither of them, as far as he was aware, had any erosion of the coast properly so called, *i.e.* the wearing away of cliffs. Holland had, of course, a seaboard wholly of low-lying land, and a great part of the country was at a level below high water, so that it was vital to the lives of the inhabitants and to their prosperity that the land should be protected against an inflow of the sea. There was therefore a very good reason for the Government undertaking the maintenance of sea defences.

Belgium again was not like England. It had little more than 40 miles of sea frontage. Part of that front was already accreting and part of it was subject to the encroachments of the sea, at present prevented by a sea bank, behind which was about 193 square miles of low-lying country. There again the Government had, no doubt, good reason to take over the maintenance of that short sea frontage; but it would be very interesting to know whether the Government of Belgium levied a rate for the cost of those works on the owners or occupiers of the 193 square miles or whether they taxed the whole country for the cost. That led up to the question of taking over the protection of our own coast by the Government.

Crown rights and obligations were referred to in the Paper, with the decisions of judges thereon. But it would be noticed that in both cases the reference was to "inundation of the water." It could not be said that cliffs suffered from inundation by water as generally understood. But the old Act of Henry VIII., which was the foundation of all Commissions of Sewers (23 Hen. VIII. cap. 5), referred specially to low-lying

lands. The first part of the preamble ran as follows:
“ Considering the daily great losses which have hap-
“ pened in many and divers parts of this his said realm
“ as well as by reason of the outrageous flowing, surges,
“ and course of the sea in and upon marsh grounds and
“ other low places heretofore through politic wisdom
“ won and made profitable for the great common
“ wealth of this realm, as also by occasion of land
“ waters and other outrageous springs in and upon
“ meadows, pastures, and other low grounds adjoining
“ to rivers, floods and other watercourses.”

He thought that it could not be shown from the Acts or the decision quoted that there was any obligation on the Crown to protect the cliffs, as they referred only to low-lying lands.

In considering the question of a State Department being created for the purpose of protecting the coast, a clear distinction must be made between low-lying lands and cliffs. The former were provided for under several Acts besides that of Henry VIII., notably the Act of William IV. and the Land Drainage Act of 1861, which provided for the establishment of Commissioners of Sewers for all low-lying lands.

These Commissioners of Sewers did their work very well in most cases, and employed competent engineers and expeditors to superintend their works. They had as a rule a large area to rate, and the rates were, he believed, fairly well paid. He had himself been over several very large areas of such land which comprised more than half a million acres in all, besides which there were many others which he did not know personally.

It had been suggested that the duties and powers of all these Commissioners of Sewers should be handed over to local authorities, but that proposition did not commend

itself to him at all. The Commissioners were, as a rule, landowners, who knew by experience what was required for preserving their land from overflow, and were fully acquainted with the details of the drainage of land, sluices, and river walls, and he could not imagine a much better body for the purpose (though he would give them greater powers) than the landowners themselves, who were vitally interested in seeing that the work was efficiently done. But the case of cliffs was quite different. The difficulty in the case of cliffs was that it was not possible to rate an area sufficiently large for the protection of the frontage. The expense fell entirely on the frontagers. Assuming that the value of cliff land on the front was £30 per acre, £300 per acre per annum would be required to protect it.

As the law now stood it was impossible to create Commissioners of Sewers for cliff lands. The owners of the back lands knew that the sea would not come to them for a century or two, and they were content to go on as they had always done. In one case in Yorkshire a scheme was attempted, and the land was duly laid out on a plan in zones, but when it had been got into shape the landowners would have nothing to do with it. It seemed therefore to him that what was wanted was some central advisory body. Since the time of Henry VIII. a great deal of land had been reclaimed, but there was still a great deal of low-lying land without Commissioners of Sewers, and some steps should be taken to put that land into commission, for while one man might keep up his walls well, another might, if there were no Commission, let his down, and his neighbour would have no remedy for damage by the tide coming over his land.

With reference to deep sea erosion. "Deep sea" had

been defined as anything below low water, which was, perhaps, not a very happy definition. The evidence of Captain Maxwell, R.N., who appeared before the Erosion Commission on behalf of the hydrographer of the Admiralty, and who had of course access to all the Admiralty charts, was that, as Professor Robinson said, "English charts show that there is practically no variation in the level of the sea bed beyond wave or tidal influence." There was in fact scarcely any change in the sea bed round our coasts, and, what was more, Captain Maxwell said that the gradient of the shore between high water mark and the bed of the sea remained pretty much the same. There was only one exception, namely in Cardigan Bay, where the sea bed had been eroded.

He thought it very difficult to determine that the sea had power to remove material at a greater depth than five or six fathoms, although Professor Robinson said that in cases of storm it might move stones and rocks as low as thirty or forty fathoms deep. He believed, from what he had observed on the coast, that in strong winds shingle was moved along the bed of the sea, but it was very difficult to prove it.

On page 112 of the Paper, the author said: "Many works carried out to protect the visible foreshore above low water will probably in the course of time be undermined by the erosion in deep water of material from the bed of the sea at some distance from the place where they have been executed." That was rather a serious look-out for those engaged in constructing works for coast defence. Though he had constructed many sea-walls and groynes during the last thirty years, he had not observed any tendency to undermine the sea ends of those works. In inspecting

many works round the coast he found that the damage to the groyne, if any, was more often in the middle than at the end. The effect of building a sea-wall was to cause a scouring away of the shingle, to the great danger of the wall, but that was not the undermining to which he understood Professor Robinson to refer. Groynes put in by Sir John Coode more than forty years ago at Spurn Point were, when he saw them three or four years ago, still sound, and showed no sign of undermining. He thought it would be interesting if Professor Robinson gave some cases where any such effect had been observed.

The Author said that "On the east coast the "direction of the drift is from north to south; on the "south coast it is from west to east." That was so generally, but he knew places on the south coast where the drift was from east to west; for instance, from Selsea Bill it travelled to the west, and from Lulworth in Dorsetshire it travelled towards Weymouth.

He quite agreed with Professor Robinson that "Land "springs are sometimes also a contributory cause of "slips of cliffs, with the resultant increased erosion." But he could not quite agree about the value of land lost by erosion being far greater than that reclaimed by natural accretion. He knew many marshes round the coast, and down the river as well, which were much more valuable than the land eroded, for instance, from the Yorkshire cliffs.

He might add to the case mentioned by Professor Robinson of a sea wall being undermined by the sea breaking against it. All sea walls were exposed to the same danger by the recoil of the waves.

As to the manner in which this question should be dealt with and the work carried out, certain things seemed

to him to be essential. First, a revision of the sewers laws. Then he thought that all new plans for works on the seashore should be submitted to some central authority. This could be done by the extension of the staff and powers of either the Board of Trade or the Board of Agriculture. As he had said, most of the low-lying lands round the coast were provided for by Commissioners of Sewers, but the cliffs still remained to be dealt with. There was no great engineering difficulty in stopping erosion; all that was wanted was the money.

The Secretary then read a communication from Mr. A. HAVELOCK CAREY, M.Inst.C.E., who was unable to be present, as follows:—

“Professor Robinson’s Paper deals with two subjects, Erosion and Reclamation. In a paper read before the Institution of Civil Engineers, in November, 1904, I mooted a proposal, which I am pleased to see Professor Robinson supports, for the establishment of a Coast Commission, whose specific function would be the prevention of erosion and the maintenance of the coast line. In a subsequent paper before the Society of Arts, in May last, I further elaborated this proposal, which has been very generally advocated by witnesses before the Royal Commission as the primary solution of the problem.

In addition to carrying out a number of foreshore defence works, I have permanent charge of over 60 miles of coast line, the upkeep of which depends on earthen embankments. The rights and liabilities of littoral ownership form a most complicated problem, and there is no doubt that the legal aspect of the question will have to be simplified by legislation. The late Lord

Farrer, in a circular to the officials of the Board of Trade, was compelled to recommend to them extreme caution in dealing with assumed littoral rights, as he pointed out that the position of the Crown in these disputes was uncertain. In the paper above referred to, I stated the law and custom in a number of foreign countries as to the upkeep of sea-side lands liable to erosion or accretion.

A short time back I had to advise on a case of some novelty. An owner had acquired from one of the Government departments a tract of land, the outer boundary of which was described in the documents as "the sea-shore," and, during a number of years, high water mark had oscillated to and fro, there being at one time erosion and at another accretion. The owner fenced off his land which consisted of sand hills, and the adjoining urban authority threatened to pull down the fence which they contended he had fixed beyond high water mark, and they further claimed a prescriptive right of way by which residents could pass dry-shod along the foreshore at all states of the tide. The dominant factor of the situation in this instance was the movement of blown sand. The leading case on the definition of high and low water lines is *Attorney General v. Chambers*, in which the Judgment of the Court was that "the average of the medium tides in each "quarter of a lunar evolution during the year, gives the "limit, in the absence of all usage, to the rights of the "Crown on the sea-shore." Medium tide was defined by Baron Alderson in the following manner: "The lines "touched by water at high tide and low tide on the "fourth tide before and after each phase of the moon, "give medium high and low water limits, the lines so "defined being the mean lines of springs and neaps. In

“law, alluvion is the washing up of sand or earth, so as in time to make ‘terra firma,’ and dereliction is when the sea sinks back below the usual water mark.”

When accretion takes place rapidly, the land accreted is held to go to the Crown, but when accretion is imperceptible it is held that the land so accreted belongs to the adjoining owner. In the case to which I refer the urban district council endeavoured to convince the Court that on-shore winds would produce rapid accretion, but there was no difficulty in disposing of this assertion and showing that it was a physical impossibility, and that they would cause erosion.

The Royal Commission is now examining in an exhaustive manner both issues raised by Professor Robinson, and it appears probable that some definite recommendations may result from their report on the question as to the manner in which public reclamation of lands can be achieved.

The whole question of the status of the sea-side landowner at the present time is on an unsatisfactory basis. In some cases it involves the greatest hardship, and it would appear to be the function of the State to hold the balance between the various conflicting interests and to evolve some constructive policy on this subject, which is one of national importance.”

Mr. W. WHITAKER, F.R.S. (Visitor) said he must congratulate Professor Robinson on having been able to condense so much information into so short a Paper. A hope was expressed that the recommendations of the Royal Commission now sitting might be promptly dealt with by the Government, but he feared that it was not the way of Governments to do that sort of thing, and that their promptitude must not be too much relied upon.

The case of Lowestoft referred to in the Paper showed the very unsatisfactory nature of the law on the subject. Lowestoft, or the southern end of it, was in considerable jeopardy. The town-authorities had done what they could ; they had improved and patched up the wall and had gone to the limit of their powers, but they could not go beyond their boundary, where the danger really arose. While authorities were hampered by such restrictions it was impossible to deal with the subject in an efficient way. If Lowestoft were empowered to go beyond its borough-boundary, it would be possible with the help of those beyond who would be benefited to do something to meet the case ; but if the town were willing to spend a large sum they could not do it while things were in that state, and it was clear that some controlling authority should have power to bring the various owners into line.

In the case of the Warren at Exmouth the matter was a little different, for there he should fancy it was a little too much accretion that was stopping the channel. The Warren had always tended to extend eastwards with the general run of the shingle and sand, and of course it wanted looking after.

He doubted if there was any need for the creation of a separate State department, and he presumed Professor Robinson would be content if some existing department took over the matter. Then the question arose, What was the department to do ? It was clear, he thought, that national money could hardly be used for purely local purposes. The many must not be taxed for the benefit of the few, although the few might have to contribute for the benefit of the many. In the case of Lowestoft for instance where valuable land as well as buildings were concerned, how was the rest of the

population of Suffolk to be made to pay for the preservation of land on the seashore in which they had no interest whatever?

It was a very difficult question, and he much doubted if anything could be done in the way of distributing the burden of the work over a given area. But what to his mind would be more valuable was that some Government department should take the matter in hand and should become an advisory board. When he said "advisory," he meant not only in a positive but also in negative sense; there should be power to prevent any stupid waste of money and the misguided endeavours to do good which so frequently resulted in harm.

What was wanted for coast-protection (he was speaking of the higher lands) was some consolidated scheme in the case of several neighbouring ownerships, with a first-rate man to overlook the whole.

The cost of protective works was the great thing to be considered. He was bound to accept the fact that there were certain pieces of coast, not few in number, which were not worth any protective works at all, for their fee simple value was not one-tenth of the cost of the works which would have to be made to protect them. He had recently been told of a farmer on the Yorkshire coast who, when asked whether he would join in getting up a sum of £5,000 for a certain piece of coast-protection in his own neighbourhood said, "Oh, no, he should not think of doing it; he would sooner lay out the money in buying land further inland." That seemed in fact to be a very general feeling.

It was not easy to compel the Crown to carry out its duties or to protect the rights of individuals. In the reign of Henry VIII. there was not much attention paid to the subject of coast-erosion; the particular Acts

mentioned had in view the prevention of inundation by water and referred not only to coast-works but also to inland floods. No Government could be expected to take such diverse work on its own shoulders.

Reference had been made to the very difficult question of the deeper sea-erosion. The difficulty was that it was not possible to make observations of what was taking place at a depth of 30 or 40 fathoms. It was said in the Paper "that during a storm in 1898 " blocks weighing more than 40 tons were displaced at a " level of 37 feet below low water spring tides," but for an engineer to endeavour to deal with that sort of thing would be to strive after the impossible.

He was a little troubled by a paragraph on page 115, in which Professor Robinson said, " The land adjoining " a coast is often drained by conveying the rainfall, or " springs, to the nearest part of the cliff, and letting it " run down the face of it to the sea." That depended, he presumed, upon what part of the face it ran down. He should say that such work might in some cases tend to protect the cliff. At Sandgate, a landslip occurred some 20 years ago on the site of an old landslip. When such a slip had happened once it was likely to recur. That particular slip did much damage, destroying houses and grounds, and having very serious results; but, curiously enough, it ended rather sharply on the boundary of another property where drains had been put in, carrying the water down to the foot. That was War Office property, and the War Office had for once done the right thing. At Shorncliffe they had valuable land which they took care to protect, and the whole mischief might have been prevented if the neighbours could have been compelled to do the same. If the whole place could have been dealt with, and not only a small

part of it, the money would have been well spent in protecting the whole.

He agreed with Mr. Grantham as to the comparative value of land accreted and of that eroded. The accreted land, or most of it, would fetch a much higher price or rental than was paid for the land which had been lost.

The reclaimed marsh or low-lying pasture-land was probably among the best land in the country, and was steadily being added to, but some foresight must be exercised in the matter. In one case at Lynn a square mile of land was gained, during his residence there, but owing to the destruction of an old wall the water came in and killed a lot of sheep. In putting down a new sea-wall in front of another it was necessary to take care that the new one was finished before the other was pulled down, which was after all only common sense.

The protection of all low-lying accreted land depended to a great extent on the existence of higher land in the neighbourhood. He was pleased to hear from Mr. Grantham that the low-lying lands were as a rule carefully looked after by intelligent boards, and not confided to the care of borough or county councils. The existing bodies each dealt with a natural, and not an artificially defined, area. The County Council might be a competent authority to deal with a fairly self-contained area like Norfolk, which was bounded by the Fens and the Wash on the one side and by Yarmouth Estuary on the other.

He was glad to note that Professor Robinson had said, as any engineer must, that in arranging works for coast-protection it was essential first to study the locality carefully. What was good for one place was not proper for another, or at least not best for another; and it was

very important that all local conditions should be considered in those matters.

As to the removal of shingle and sand, he should be inclined to say that no shingle or sand should be removed without the consent of some high authority. There were very few cases where such removal did no damage. He knew of only one class of district where by judicious removal no damage had been done. For example, at Dungeness the shingle was a mile or more broad, and carting from the land-side could not affect the sea-front. He knew of a case in the Isle of Wight where one Government department was putting its foot down, and very properly, against the removal of shingle from the coast, while another department was removing the shingle for works. That sort of thing should not be possible. There should be one department having control over all such matters along the coast, competent to advise and with power to insist upon the carrying out of its advice. The people who removed shingle did not think any harm would be done, but most of the harm in the world was done by the people who did not think.

The Paper was very opportune, as dealing with a subject which had called forth much expression of opinion of late. He was glad that the Government had at last appointed a Commission, which was apparently making fair progress, and he could only hope that their labours would have some adequate result.

Mr. W. F. INGRAM (Fellow) said his only excuse for taking part in the discussion was that he happened to be on a Commission which had the control of a certain amount of useful coast work carried out by the joint efforts of certain public bodies, companies, and private owners. He referred to the sea defence works between

Newhaven and Seaford in Sussex. It had been found that, owing to the breakwater on the west side of the harbour, the beach, instead of shifting from west to east as previously it had always done, now travelled from east to west, with the result that it would, if left to itself, have gradually blocked up Newhaven Harbour. The Newhaven Harbour Company, of which he was a member, had therefore got other bodies and private owners to join them, and in the years 1900 and 1901 a sea defence wall was run for a length of about $2\frac{3}{4}$ miles, at a cost of nearly £70,000. The work was now kept up by a maintenance fund, which the bodies contributing were from time to time called upon to maintain at a certain figure. This very satisfactory solution of what might have been a considerable difficulty had been carried out by a joint board.

All who owned land near the sea would be only too thankful if the Government would take these onerous duties off their hands, but he was afraid it must be some time before this would be done.

Mr. F. STILEMAN (Visitor) said he thoroughly agreed that some department—the Board of Trade or some other—should be asked to approve every plan for coast protection, and having approved it, should see that the works were properly carried out and maintained. He knew of cases where works had been constructed with no provision for maintenance, with the result that perhaps more mischief was done than if the works had not been erected.

He agreed with Mr. Grantham as to the Commissioners being generally very excellent bodies, who carried out their work very efficiently.

Mention had been made of Newhaven, and this re-

mind him that at Eastbourne and Beachy Head, on the same coast, the erosion was at the rate of about 18 inches a year, and at Holywell as much as 2 feet 9 inches, the erosion being, he believed, partly due to the Newhaven Harbour Works which had accumulated gravel behind them, and later to a heavy fall of chalk at Beachy Head. The promenade at Eastbourne was built with a vertical wall founded on the chalk, 9 feet below the foreshore without groynes; the result was that the foreshore chalk was entirely eroded and the wall undermined. Groynes were then erected which have proved eminently satisfactory. To the east of Eastbourne was the "Crumbles," an enormous area of gravel mixed with flints, no doubt eroded from the chalk of the coast. Part of the Crumbles was now being eroded, and within the last few months high water mark had in some cases receded no less than 9 feet.

In his opinion the land that had been accumulated had nothing like the value of that lost by erosion. He knew that according to the Royal Commission the extent eroded was less than that accumulated, but he believed this included an area in Morecambe Bay which certainly had no value from any point of view.

Reference had been made to the effect of land-water coming down the chalk cliffs. At Holywell, which he had just mentioned, the water soaked through the cliffs, and in frosty weather brought the chalk down in considerable quantities, which helped to account for the serious erosion that had been going on for the last few years.

He quite agreed with Mr. Whitaker that the removal of shingle and sand should not be permitted except in cases where it would cause no trouble to works of sea defence. On the island of Walney, where the accretion had been at the rate of 9 feet a year, the accumulation

was so rapid that it became absolutely necessary to dredge or remove the gravel for the purposes of maintaining navigation. This was done by the Furness Railway Company who as Harbour Commissioners were responsible for the maintenance of the approaches to the harbour and docks. Other gravel in the immediate vicinity was removed by the lord of the manor under the jurisdiction of the Harbour Commissioners, which doubtless proved of value to him, and was not detrimental to the harbour. There were, however, many cases in which the removal of shingle might be extremely detrimental.

His experience of the use of reinforced concrete was limited, but he did not think he would be disposed to use it very largely for groynes, for water might attack the iron even through the concrete.

In constructing a groyne, tier should be laid upon tier as the accumulation grew, and he thought that would be difficult with reinforced concrete. He had built very efficient groynes by means of using jute sheets, each made large enough to take a day's work—say 30 yards of concrete. The sheet was laid down and the concrete thrown in. At the end of the day the whole was turned over, forming a sort of bag of concrete with the rounded side placed to meet the tide, and in that way the work had been done very cheaply and he believed very effectually.

Dr. J. S. OWENS (Visitor) said that on p. 113, after alluding to the erosion of the coast due to storms, Professor Robinson referred to the growth of deep seaweed, *Laminaria digitata*, as assisting the action of the waves at a depth of 30 or even 40 fathoms. He thought he was correct in saying that as a rule *Lami-*

naria extended only from low-water mark to about from 7 to 15 fathoms, and not beyond.

Even if that were not so, it was far more likely that the stones washed ashore during a storm came from very close to low-water mark. Assuming the sea bed to be covered with such stones from low-water mark to 30 or 40 fathoms, there was, he thought, nothing to prove that those washed up came from the furthest limit.

Reference had been made by previous speakers to the use of reinforced concrete for groynes. During last summer his firm had put in some five or six groynes of reinforced concrete on the coast of Sussex, so constructed that tier upon tier of material could be added as the shore built up, sliding slabs being fixed between upright columns which kept them in position. This method of construction was found to answer its purpose well.

The amount of accumulation which had resulted from these groynes was extraordinary. When the five groynes, each about 500 feet long, were put in, there was no shingle or beach on the foreshore except at one end, and now every one of those groynes had an accumulation of 6 feet to 8 feet of shingle, and in the case of three at least that accumulation was equal on both sides.

Reference had been made by Professor Robinson to the stopping of drift by the groynes. He said, "If any does travel it will be carried into deep water as it is washed along the coast past the ends of the groynes." His (Dr. Owen's) contention was that when a groyne did not exceed more than 2 or 3 feet above the foreshore level, drift took place over the top of it. It seemed strange, but even stones and shingle did not travel entirely along the bottom. He had seen them rising above the surface of the water in rough weather, and they actually did sometimes travel some little distance

above the bottom of the sea, and so got over the tops of groynes when they were not too high.

He made some experiments last summer and the results were rather curious. They were set forth in a Paper before the Research Department of the Royal Geographical Society last November. He found that sea sand commenced to move with a current of sea water of a velocity of 0.85 f.p.s., and movement was in the form of ripples. These ripples were always swept away when the current exceeded 2.5 f.p.s., but remained well formed at all intermediate velocities. He found that this had an important bearing on the travel of stones and coarse matter such as shingle, for as long as the sand ripples persisted, all stones and shingle were trapped in the trough of the ripples, although the current might be strong enough to move them over a smooth bed.

For instance, a current of two feet per second was able to move a stone as big as one's fist over a smooth bed; but that stone would never travel over a "rippled," bed, but at once began to bury itself. The currents which were able to move stones of a certain size on a smooth bottom could not do so when it was ripple-marked.

He could bear out the remarks in the Paper as to vertical faces of sea walls, but he of course referred to walls for foreshore protection only, and not to walls in deep water.

On page 117 Professor Robinson referred to the position of groynes. That was a question on which engineers were not agreed; but he was of opinion that the proper position for groynes was at right angles to the coast line, and he had never heard what seemed to him a sound scientific reason for putting them at any other angle. He hoped that Professor Robinson would

say in his reply what he considered to be the correct angle, and upon what his opinion was based?

Mr. J. J. DONE (Fellow) said he desired to say a few words on behalf of that not unimportant section of interested persons which had not yet been represented in the discussion, namely the people who had to find the money. It had fallen to his lot—not perhaps on a very large scale, but sufficiently so to give him many an anxious quarter of an hour—to have to settle questions of finance in connection with the upkeep of sea walls, and to decide other points which did not come within the province of the expert engineer.

Land agents who had the charge of estates which bordered on the sea had practically to take the responsibility of deciding or advising their clients to decide as to the desirability of the expenditure which the engineer required. He could heartily endorse what Professor Robinson had said as to the desirability of reliable data on these questions, and he had been surprised to find how little information was available.

In many cases, in years gone by, coast defence had proceeded on a haphazard method, the only object being to get as easily as possible out of a temporary difficulty, and it seemed to him that there was from a scientific standpoint a great want of systematic and accurate observation extending over a considerable period.

What had impressed itself on him from time to time in considering the question, was that when one inspected a foreshore on a certain day and made certain observations as to the drift of the sand, the position of the banks and so on, and then saw the same foreshore again in a month or six weeks, or even in a fortnight's time, the conditions were utterly changed and an entirely different question had to be considered.

Again, he had sometimes had to consider whether such works were advisable at all. He had in his mind an estate of not many acres, which was protected by a sea wall extending about a third of a mile in length, and from records which he thought might be taken as fairly accurate, it would appear that in the course of 80 years 8 acres had been lost by erosion—an acre in 10 years. The land happened not to be worth very much, say £15 an acre, and the loss of 10 acres in 100 years only represented 30s. a year. He could not conceive any form of sea defence that could be maintained more economically than 30s. a year for a length of one-third of a mile.

Another consideration was that, although there were certain records as to the height of storm and gale tides, there was no accurate record of phenomenal storms, which occurred perhaps only once in the course of a century but which might at any moment arise and cause great destruction. For instance, the great storm of 1703 was abnormal, as was that which swept away Winchelsea in the 13th or 14th century; but something of the kind might occur now or at any time during the next 100 years, and this possibility must not be lost sight of.

Another difficulty was the absence of any regular authority to deal with particular districts. Commissioners of Sewers and individual landowners were left to do their best. On the north of Kent, at the mouth of the Medway and on the shores of Sheppey, the “ever-jealous and revengeful sea” had already taken back what 40 or 50 years ago was conquered from it at almost incredible expense and labour.

In a case with which he had to deal at the present time there was a considerable extent of sea wall to keep up for the protection of a very small estate. The next

neighbour owned 10 acres, and had, he supposed, about 10 chains of sea wall to keep up. In consequence of the depreciation of land values the expense was scarcely worth incurring, and none of the owners at the back would contribute a sixpence to the upkeep of the sea wall. The question had now become acute as to whether the wall should be abandoned in the hope of bringing the other landowners into line and inducing them to bear their share in the upkeep of the wall.

There was, he supposed, a possible remedy for what it was worth, by applying to the Crown for a Commission of Sewers, but it would be necessary, he believed, to get the consent of two thirds of the landowners. As soon as they realised the value of the wall and the probability of its being abandoned they would no doubt solve the problem by coming into line; but what he wanted to point out was that in such a case a landowner was faced with having to sacrifice his property in order to preserve it. It seemed to him that there should be some method of dealing with a problem of the kind, and that it could be done easily if the Legislature were once persuaded to give it attention.

The vote of thanks having been put to the Meeting and carried unanimously, Professor Robinson, in thanking those present for the kind way in which his Paper had been received and expressing his gratitude to the speakers who had thrown such valuable light on the subject, said that at that late hour he did not propose to deal with the questions raised in the course of the discussion, but would ask permission to reply to them in the next part of the *Professional Notes*.

The Meeting then adjourned.

SOME URBAN LAND PROBLEMS.

By A. W. CRAMPTON (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION on Monday, January 27th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

UNEARNED INCREMENT.

I believe it is practically undisputed that enormous sums of money have been secured by owners of land without personal effort, in consequence of the growth and industrial development of various countries. These sums have been described as unearned increment considering the recipients, and collectively earned increment considering the creators.

The existence and magnitude of these sums being generally conceded, it was only natural that efforts should be made to divert them from the pockets of private beneficiaries to the custodians of the public purse as representing the community by whose labour they had been created.

The genius of Henry George grappled in vain with the problem. His lucid presentation of the question has

never been excelled, but the drastic confiscatory measures which he proposed could not commend themselves to justice-loving Englishmen.

At an earlier date John Stuart Mill had well explained the nature of unearned increment, but his judicial mind shrank from dogmatizing on the expediency of transferring the benefit to the community by reason of the inherent difficulties of the case. Since his time, however, the expansion of land values has been enormous, while the difficulties of diversion are considerably increased by reason of the greater complexity of tenures.

We are not socialistic enough—nor does any other country appear to be—to take the bull by the horns and buy up the whole of the land values and cancel them by terminable annuities. We try to resort to other means in our endeavour to get hold of these values for the benefit of the people, and the proposal now commanding general attention is that of taxing land values.

A Royal Commission has recently investigated the whole question of local taxation, and came unanimously to the conclusion that land values were assessed and rated just as much as buildings, and that therefore there was no foundation for the popular cry that they escaped. A smaller but more far-seeing section of the people knew this, but advocated the taxation of such values for a different reason, namely, to introduce the thin end of the wedge as a means of restoring such values to the community to which they considered they belonged. They were modified single taxers. They could see in this proposal, as Dr. Murray suggests,* a beginning towards land nationalization. But it is doubtful whether their hopes would be realized by the plan.

* *Transactions*, vol. xxxix. p. 429.

A crucial question is whether a tax separately imposed on land values would fall, as intended, on the owners of such values, or whether it would be shifted by them on to their tenants. If the volume of taxes remained unchanged it appears to me certain that it would be shifted to the tenant. If the volume of taxes were increased by the tax, I still think much of it would be shifted to the tenant. Theoretically, if, in general, rack-rents are realized, or, in other words, if current rents are the maximum rents obtainable, then a new tax must come out of such maximum rent, and therefore would fall upon the owner of land values. But, in practice, rents are found to be more or less capable of increase from pressure by owners; and in the case of a general tax this pressure would be the result of concerted movement. This tendency is specially noticeable in the case of central positions. So great is the competition for these that your rack-rented tenant of to-day can be still further squeezed to-morrow.

It does not therefore seem safe to assert that all increases of rent are the result of economic pressure due to competition alone. But assuming that they were assuming as correct the proposition of Ricardo that "a tax on rent would fall wholly on landlords, and "could not be shifted to any class of consumers," it is necessary to see what is covered by the word "rent" in this proposition. It of course refers to pure economic rent, that is, to rent arising from the natural capabilities of the soil, or *pari passu* to that arising on urban sites from mere presence of population.

Now how does the proposed tax on site values appear in this light? What is it to be levied in respect of? The Commissioners who advocated this tax in the Minority Report proposed "that the purposes for which the site value

“ rate might be raised should in the first place be defined
“ by Statute.” They add, “ We are conscious of the diffi-
“ culty of framing an exact definition or an exhaustive
“ catalogue of such purposes; but speaking generally,
“ we are of opinion that they should be strictly limited
“ to expenditure tending to increase directly the value
“ of urban land. In the next place, although, as regards
“ equity of distribution and ultimate incidence, the site
“ value basis is the important matter, and the charge on
“ owner or occupier is a matter of temporary con-
“ venience, we recommend that one-half of the site
“ value rate should be deducted from the rents payable
“ to owners under all future contracts, and the remaining
“ moiety should be finally charged upon occupiers
“ There is a great deal of expenditure which undoubtedly
“ increases the value of sites, but yet concerns the
“ owners, as distinct from the occupiers, only remotely.
“ For such expenditure a site value rate on occupiers
“ appears to be theoretically the most equitable mode of
“ charge.”

Unfortunately the Commissioners did not attempt to construct a list of improvements in respect of which the rate should be levied, but their proposal to divide such a rate between owners and occupiers shows that they think both reap benefit. It will be observed that they say that expenditure which increases the values of sites may concern the owners only remotely. In other words, the benefit of such expenditure accrues for the time being to the tenant, so that *pro tanto* the tax would not fall on economic rent at all, but be a payment for services rendered.

And now leaving principles and coming to particulars let us consider in respect of what matters such a site value rate could be levied. Not sewerage works, nor

water supplies, nor gas supplies, nor electricity supplies, nor road maintenance, nor baths, nor recreation grounds, nor museums, nor free libraries, nor policing, for either the tenant, as such, gets the whole benefit of some of these, or neither he nor the landlord reap any benefit capable of practical consideration from the remainder. In the case of a road widening, a considerable increase of value might attach to the site, but this might be secured to the community by means of the application of the principle of betterment, as was done in the case of the Tower Bridge (Southern Approach). I consider that increase in value due to public improvements forms but a small part of the total unearned increment. By far the greater part is due to presence and activities of population. But, it should be observed, it is only in respect of future improvements that such a tax is to be imposed. Moreover, the Commissioners suggest "that the rate in the £ of the new impost should be "strictly limited by Parliament." So that this small rate in the £ is to be divided between owners and occupiers, and all the machinery of assessment and collection to be put in operation to secure it. On these grounds it does not appear to be worth the cost.

The Minority Report states: "There is, however, "another feature about urban site value which appears "to us to be almost, if not quite, peculiar to it; that is, "the increase of value due to the expenditure of public "authorities on improvements. We admit the extra- "ordinary difficulty of exactly correlating the burden "and the benefit of such expenditure over different "areas, but we think that the general truth that the "benefit of improvements attaches to the site is a "powerful argument for making the necessary taxation "proportionate to the site value."

There is here a frank admission that the value of sites is increased by public improvements, or, in other words, that the owners reap unearned increment, and an equally candid admission that it ought to be taxed. They concede, in short, the popular demand. But they think the tax should be strictly limited in amount by Parliament, and that half of it should be paid by the occupier. They concede in fact the principle contended for by Henry George, and the only difference between them and him is one of degree. He was logical and confiscatory, they are logical and ineffective. They offer a sop to Cerberus, he a good meal.

I know, of course, that advocates of the tax say that, in order to ensure the payment of the tax by the owner, the occupier should be authorised to deduct from his rent the amount paid by him in respect of the owner's share as in the case of the income tax, but how is it possible to prevent an owner entering into a new agreement with his tenant at an increased rent to cover the amount of the new tax, on the ground that the increase is in respect of increased rental value and not in respect of the tax? When men have built up businesses they will stand much squeezing rather than face a change, and I have little doubt that, in many cases at least, the new burden would be transferred to the tenant.

While I agree with Dr. Murray that land values are fully taxed (except in the case of building land—actual and prospective), I cannot at all agree with the arguments by which he endeavours to make out that there is no unearned increment. As a special pleader he out-Herods Herod. Before I deal with his arguments I would venture the opinion that the matter has really passed the debateable stage, but it is due to so able an

exponent as Dr. Murray that his arguments should be carefully examined. And first I propose to deal with his statement that "it is inaccurate and misleading to say that land values are the creation of the community." He argues that Glasgow, for example, is wholly dependent for its material prosperity upon its trade with foreign lands, and conversely that the value of the wheat lands of Canada and the pasture land of Australia arises from the demands of Europe for wheat and wool—both indisputable propositions. But what he does not see is that Glasgow pays for all foreign goods it requires with the produce of its own labour. Would Dr. Murray say that, because, before England had any foreign trade, London was entirely dependent on the country districts for food; that therefore London land values were due to the country districts? For this purpose there is no essential difference between home and foreign trade; there is no special virtue in a boundary line upon a map. Would Dr. Murray say that we are less industrious with a foreign trade than we used to be without it? As a matter of fact, competition has sharpened the edge of industry. Clydebank, he says, was made by the demand of foreign countries for sewing machines; and, may I add, that our demand for wheat, and meat, and other things has helped to create the land values of New York, Chicago, and many other places. Dr. Murray sees only ships going down the Thames and none coming up. On his logic I think we ought to present India and Canada and all other places with which we trade with bonuses in respect of our unearned increment, or perhaps, as he would prefer to say, land values.

I pass now to his allegation that land and building values cannot be separated with any degree of reliability. I will not deal with the evidence of qualified witnesses.

as to whether this is feasible, because I consider this aspect has been sufficiently examined to enable outsiders to judge. I will just remark that the impossible has already been done over the length and breadth of England under the provisions of the Agricultural Rates Act, and that, under those provisions, farm buildings and land pay rates on a differential assessment.

In the case of a pastoral farm he continues: "The improvements consist principally of farm buildings and fencing. As a rule their cost runs from one-third to one-half of the value of the farm." Now, in assessing farms—indeed in assessing all ordinary properties—the last thing the assessor looks at is cost. In such cases cost is in no wise the legal basis of assessment. The well-known principle is annual value, and I suppose the simple plan adopted in assessing English farms for the purpose of the Agricultural Rating Act has been to take the old assessment for the whole, and to say the land without the buildings would let for so much, and the buildings without the land for so much, and that these together make the old assessment.

Dr. Murray thinks also that allowance must be made for maintenance and sinking fund, before the unimproved value of the land can be arrived at. But he is really building up an imaginary case in order to knock it down. It is not proper to proceed in this way at all. The present basis of assessment is annual value, and, to find the rateable value from the gross value, allowance is made for repairs and reinstatement. If Dr. Murray wants to criticise the system of rating, that is one thing, but he nowhere shows that he does. That being so, he must follow the statute, and not want a provision for repairs and maintenance, on outlay which may have no annual value at all.

Similar misconception permeates his further statement that the land must be considered as being without roads, shelter, water supply, and the rest. His idea is that in order to find what land is separately worth for assessment we must go back to the time of its first enclosure, and deduct from the total value of the farm for every improvement that has been made since. He would, apparently, deduct the whole increase of value which flowed from the relatively inexpensive enclosure of English land. As he himself states, probably nothing swelled economic rent more than this operation, and some of this increase still remains as rent in the case of good land.* But on any reasonable view of the case the long period during which such rent has been enjoyed has cancelled the cost of the improvement. I would remind Dr. Murray that in all cases the percentage returns on an investment include a portion for the sinking fund he refers to. He shows quite truly that some improvements are exhausted in a short time and that others are relatively permanent. But I would ask him on what principle known to theory or practice are improvements, however permanent, to continue for ever unliquidated? On his reasoning I do not see why allowance should not be made in respect of the benefit to land by the roads and watercourses constructed by the Romans in England. It is obvious that most early operations necessary to make land properly cultivable are, in practice, liquidated by time; otherwise in a large number of cases total outlay would much exceed present value.

* A recent estimate of the economic rent of agricultural land in Britain is just over £6,000,000. See paper read before the Royal Statistical Society by Mr. R. J. Thompson.

Where agricultural tenants execute permanent improvements, farm agreements often prescribe the period of their exhaustion. The Local Government Board scarcely ever fixes a longer period than 60 years within which loans for the most permanent improvements must be paid off by local authorities. Each generation has its own improvements to execute and redeem, and cannot be burdened with continuous charges in respect of the improvements of previous generations. Allow me to quote the words of an eminent writer upon this subject: "The value of land
" can always be readily distinguished from the value of
" improvements. In countries like the United States
" there is much valuable land that has never been
" improved; and in many of the States the value of the
" land and the value of improvements are habitually
" estimated separately by the assessors, though afterwards re-united under the term real estate. Nor
" where ground has been occupied from immemorial
" times, is there any difficulty in getting at the value of
" the bare land, for frequently the land is owned by one
" person and the buildings by another, and when a fire
" occurs and improvements are destroyed a clear and
" definite value remains in the land. In the oldest
" country in the world no difficulty whatever can attend
" the separation, if all that be attempted is to separate
" the value of the clearly distinguishable improvements,
" made within a moderate period, from the value of the
" land, should they be destroyed. This manifestly is all
" that policy or justice requires. Absolute accuracy is
" impossible in any system, and to attempt to separate
" all that the human race has done from what nature
" originally provided would be as absurd as impracticable. A swamp drained or a hill terraced by the

“ Romans constitutes now as much a part of the natural
“ advantages of the British Isles as though the work
“ had been done by earthquake or glacier. The fact
“ that after a certain lapse of time the value of such
“ permanent improvements would be considered as
“ having lapsed into that of the land could have
“ no deterrent effect on such improvements, for such
“ works are frequently undertaken upon leases for years.
“ The fact is that each generation builds and improves
“ for itself and not for the remote future. And the
“ further fact is, that each generation is heir, not only
“ to the natural powers of the earth, but to all that
“ remains of the work of past generations.”*

But Dr. Murray says that “ certain improvements,
“ such as levelling, embanking, straightening of water-
“ courses, main drains, roads, reservoirs, water supply,
“ and the like, do not run out ; they may have been made
“ 50 or 100 years ago, but must be taken into account
“ now if the improved value of the land is to be
“ ascertained.”

I am at a loss to understand why the figures 50 or 100 are mentioned, because a few sentences later he says : “ These would fall to be allowed for, just as in New Zealand the clearing of land for cropping is “ dealt with as an improvement.” In other words, they would have to be taken account of from the earliest times. On the whole, his intention is, I think, clear that every improvement, however remote, effected by man, or in any degree traceable to human agency, must be allowed for in arriving at unimproved value.

Now I would ask whether the principles followed by local authorities in these matters would not be equally valid for ascertaining unimproved land values ?

* Henry George, *Progress and Poverty*, page 302.

If a local authority effects any of the improvements enumerated by Dr. Murray, the borrowed money has to be repaid within periods varying from about 30 to 40 years. It is an elementary principle of finance that successive generations have successive burdens; that improvements of to-day are often, on account of scientific discoveries and inventions, obsolete in the next generation; that such improvements are sometimes liable to fail unexpectedly by *vis major*, or to become unsatisfactory or inadequate; and that, therefore, in all cases a definite term must be fixed for replacement of capital by the sinking fund. There are many well-known cases in which water supplies, whether public or private, have failed or were considered unfit through contamination for further use. Embankments are often greatly damaged or entirely destroyed by incursions of sea water, the contents of reservoirs are liberated by the bursting of their banks, and sewerage systems have to be superseded by others of greater capacity or more modern construction. If the principles enunciated by me are correct, there would be no great difficulty in fixing a period for all kinds of improvements, in determining to what extent they were unexhausted, and in deciding, in cases of doubt, approximately when they were carried out.

The opening of a pit in a colliery district at once adds thousands of pounds to the value of adjoining land. Agricultural land worth £50 per acre becomes building land worth anything between £240 and, say, £1,000 per acre.

Mr. Sidney Webb calculates that the unearned increment for London alone is £15,000,000 per annum.* Mr. Henry George lays it down that unearned increment

* The London Programme, p. 195.

increases with growth of population; which appears incontestable.

To me the task of defending its existence seems superfluous, and I cannot understand how it can be denied, and yet I am conscious that few surveyors are ready frankly to admit it. They seem to prefer to leave it in a haze. At the mention of it, they become box turtles.

I am aware that in the nature of things the Members of this Institution will be found tenaciously defending all private rights, and I do not presume to censure them. But let us endeavour, as a practical professional body, to put this matter on a scientific basis and approach it in a scientific spirit. Let us remember that individual interests must be subordinated to national needs; or to use Milton's words :

“ To the public good
“ Private respects must yield.”

LAND VALUES AS THE SOLE BASIS OF TAXATION.

I am one of those who desire to see the separate values of land and buildings appearing in the rate book, not only for the reasons advanced in the Minority Report of the Royal Commissioners on Local Taxation, but also for the additional reasons that we should have for the first time unearned increment translated into actual figures, that each year's expansion would be clearly seen, and that the figures would be available when the time arrives, as it most probably will, for land nationalization. But I cannot follow those who think that such land values could be used as the basis, and the only basis, of local taxation, nor do I think that the results claimed for that scheme would be secured.

I am not one of those who would shrink from a

change merely because the difficulties to be encountered are great, but so far as I can judge, the scheme, after all administrative difficulties were overcome, would leave us no better off than it found us.

Let us look at the proposal broadly. The present basis of taxation is the annual value of the land and buildings together; if therefore the value of land only be taken, the volume of assessable value is greatly reduced at a time when means are being sought to enlarge the reservoir of taxable capacity.

If in a given town one-half the assessable values be represented by land and one-half by buildings, this plan would reduce the assessment by one-half, and consequently double the amount of rates in the £. So that whilst there is no difference to the ratepayers as a whole, it would make material alterations in the incidence as between different ratepayers. This alteration might, I think, be expressed as follows: the burden of rates would fall more or less on each ratepayer according to the proportion of value of the land alone compared with the present value of land and buildings together.

Take the following illustration. A, a householder, lives in a house assessed now at £20 per annum. The rates are 8s. in the £. He pays now therefore £8 per annum. He happens to have a relatively considerable area of land to his house, say £200 worth, representing on assessment say £8. Under the new plan, supposing that the new assessment for a district were half the old one, the rates would be 16s. in the £. This occupier would therefore pay £6 8s.

Now take the case of B, whose house stands on just sufficient land to comply with the by-laws. He is assessed at the same amount as A, and therefore now pays the same amount of rates. Under the new plan, as

the land his house stands on represents about £70 in value, or an assessment of £3, he would get off with a payment of £2 8s.

Now, I want to find out whether this difference between A and B would be just. To do this we must look at the nature of rates, see what they are levied for, and what principles should guide us in considering their incidence. Take the case of the poor rate, which, nominally levied for the poor, generally covers a variety of other expenditure, relief of the poor being the main item.

The only principle, so far as I know, which has been propounded as just with regard to such a national burden as relief of the poor is that of ability to pay. It cannot be said that the present system of rating approximates at all nearly to realising this principle. Men of large means live in small houses with small rateable values, and men of small means live in relatively large houses or occupy relatively highly rated shops. A professional man with an income of £1,000 pays no more to the relief of the poor than a tradesman whose earnings are one-third that amount. One has a shop rated at £50; the other a house with office included rated at £50, and there are many cases where the disparity is still greater. But we should get no better basis under the new system, indeed we should get a worse, because the hope of the advocates of the new system is that centripetal taxation would be increased and centrifugal taxation lightened. This they say would encourage suburban building.

I would, however, add that I look forward to the time, not far distant I think, when these national obligations, such as relief of the poor, will become Imperial and not local, in which case a nearer approach to a just application of the principle of ability to pay will be

attained. But there will still remain the wider question of the readjustment of Imperial taxation so as to obtain equitable incidence.

The expenditure of local rates was distinguished by the Royal Commissioners as (*a*) onerous and (*b*) beneficial. The poor rate, the education rate, and the police rate come in the first category; expenditure on local improvements, such as sewerage, lighting, road maintenance, raised usually by general district rates, comes in the second. We have just seen that to levy onerous expenditure on land alone would result in greater inequalities than under the present system. Let us now try to see what the effect would be as regards beneficial expenditure. For simplicity's sake let us adopt the same illustration. A's house assessed at £20 stands on a relatively large area of land rated at £8 under the new plan. B's house is assessed at the same amount, but the land would be assessed at £3. There is about the same volume of sewage from each tenement, similar use of highways, similar benefit from all municipal expenditure, yet A would pay nearly three times as much as B. In the numerous cases in which large houses and buildings stand on small sites, the disproportion would be still more marked.

It is alleged that the new proposal would have the effect of lightening the burden on suburban land and increasing it at the centre, and the following example will show this. A shop standing on 100 square yards of land is rented at £100 and assessed at £80. The land would be assessed at say £40. Premises in the suburbs now assessed at £30 would be assessed at about £5. That is to say, the suburban resident would have his assessment reduced five-sixths and the central ratepayer his one-half. Instead of the proportions being eight to three

they would be eight to one. But I want to draw attention to the inequitableness of the proposal. From the standpoint of onerous expenditure, for which the test is ability to pay, what ground is there for assuming the greater ability of the central trader to pay than the suburban resident? Or again, what ground is there for assuming that the one derives greater benefit than the other from beneficial expenditure?

Other things remaining the same, the change would assist in solving the housing problem, but there would appear to be no justification for such a transfer of burden. The problem is not so much one of readjustment of burden as between sections of ratepayers (except perhaps in cities embracing many local authorities), as of diverting unearned increment or taxing land values.

But other conditions would not remain the same. Rack rent is always obtainable—at least so say the advocates of this tax—and it is immaterial to the occupier whether it consists of more rent and less rates or less rent and more rates. The fact is economic law cannot be defeated by apparently taking from A and giving to B.

There are some economists and surveyors who hold that the burden of all rates falls *ab initio* on the landlord. They say that if a builder had not to pay a certain amount in rates he could and would give so much more for the land. If this be true, then relief of rates to builders in the outskirts would be appropriated by owners as increased ground value. By the same reasoning increased burden of rates on central sites would diminish the rent. But here comes in a factor which does not appreciably affect suburban land but has a profound effect on central land. Competition in trade is so keen that it is very difficult to assign the bounds of

rent and rate pressure which tenants will submit to rather than remove. Traders are largely compelled to stay where they are, but suburban residents can easily change their abodes.

Similarly it is contended that "the pressure of the
"site value rate would tend to bring more and more
"land into the market and at cheaper prices; so that
"two influences would be at work simultaneously in the
"direction of improving the provision of house accom-
"modation and lowering the standard of house rent."
Now it appears probable that the imposition of a site value rate would tend to make owners more ready to sell, and by competing for purchasers, lower the price of land; but when the new owner has got it he will have to pay the site value rate, which, with the price he has paid for the land, will make up the original value or nearly so, and the interest upon the total will fall upon the occupier as rent, and there will in that case be no diminution of the rent and rate burden. Whatever view may be taken of the ethical aspect of competition, it is not possible to defeat the operation of the economic laws under which rack rents are obtained by any jugglery of shifting incidence of rates.

I admit the forceful objections to the limitation of this taxation to urban areas urged in the article in the *Independent Review* for May, 1905. The writer finds no virtue in boundary lines upon plans; he does not think it obvious why some districts are rural and others urban, and finally, and most important of all, the plan would give to rural land just outside the urban area an advantage over that just inside, inasmuch as one would be subject to the special site value rate and the other not. There are great practical difficulties, however, in the way of carrying out the taxation of land values in rural

districts, and it becomes a question of expediency. In questions of expediency the introduction of some inequalities is inevitable. The Royal Commissioners who signed the Minority Report have suggested a population of 5,000 as the minimum for the adoption of taxation of site values. It is a very different thing to transfer the whole burden of rates on to unimproved land values alone as compared with levying a small site value rate as well as the rates now levied on rateable values.

Perhaps such a site value rate might be imposed without giving rise to much injustice as regards land just outside or just inside the building zone, but it is only tinkering with the problem.

The writer suggests that Imperial taxation should also be levied upon the unimproved land basis. He thinks the property tax, inhabited house duty, and land tax ought to be levied in this way. But I am again prompted to ask in what way this basis is better than the present one? It has, as the writer claims, the merit of simplicity, but at the expense of equity. As I have tried to show, urban land alone is less likely to measure ability to pay than land and house together. But we will now take an agricultural illustration. Assume a farm of 100 acres of rich grassland, let at £2 10s. per acre. The unimproved value is per annum £150. The present assessment for inhabited house duty is £50. In this way the contribution of the agriculturist would be greatly increased without justification, as I think. The case of the income tax would be just as inequitable. This tax is levied on the ability basis, and it appears obvious that the total income derived from land and buildings together furnishes a better criterion of this than land alone.

It is said that "the adoption of land values as the

“ basis of local taxation will practically be a reversion to “ the practice of our forefathers.” In support of this it is said that whereas in 1801 land furnished five-sixths of the taxation, it now represents only one-fifth, and that houses which formerly furnished one-fifth now furnish four-fifths. I cannot agree that this constitutes a shifting of the burdens of local taxation. What ground is there for saying that land—agricultural land—has been automatically relieved of local rates? Until the Agricultural Rates Act of 1896, for aught I know to the contrary, agricultural land bore its share of local rates as of old, and the relief of that Act was not automatic, but direct. This Act, chiefly affecting the poor rate, did not apply to general district rates. And in the case of the latter there could not be said to be any automatic shifting, because the restriction of the burden of these rates to one-fourth the assessment in the case of agricultural land was obviously due to the fact that such land only reaped a comparatively small benefit from local expenditure.

The change is not in fact a change in the “ basis of “ distribution”—the basis remains the same—but it is a change in the relative proportions contributed by urban as against rural areas. The development has been perfectly natural. I do not consider therefore that the writer has produced sufficient evidence to warrant his conclusion that “ to the change in the basis of distribu-
“ tion may be traced all the inequalities of burden,
“ against which both urban and rural ratepayers protest,
“ conscious of the injustice, but ignorant of its cause.”

Nor do I see the cogency of the illustrations given to support the writer's position. In the example given, the rates now paid on a well-cultivated and well-equipped farm of 200 acres are put at £34 16s., and on a holding

of the same extent, but under a bad landlord and poor farmer, they are now taken at £26 4s. Under the new plan, each farm having the same pure land value, would contribute £30 in rates. It is then pointed out that the improving landlord and industrious farmer would not be fined by an increase of rates upon the results of their enterprise, and the bad landlord and inefficient farmer would no longer escape part of the rate burden by virtue of their neglect.

Again, I wish to draw attention to the two principles by which we test the equity of incidence of local rates—one is ability to pay and the other benefit received. It is pretty obvious that the bad landlord and bad farmer have less ability to pay than the good landlord and good farmer. And as regards benefit received, one should be charged as much as the other, which is a point in favour of the land basis, but, bearing in mind that land only pays on one-fourth the assessment for local rates, this aspect may be neglected on the *de minimis* principle.

The fact is that there has been such a shrinkage in agricultural rent and in agricultural capital, both of landowner and tenant, that inefficient farming and unimproving landlords and tenants are an economic result rather than a lazy and unenterprising body.

If that be so, to increase the burden where the back is least able to bear it, and to decrease it where the ability to pay is greatest, is to chastise with scorpions instead of whips.

The writer quoted, carrying his proposal to a logical conclusion, points out that in the case of farms without pure land value there would be no charge at all. In doing so he seems to me to fall into an inconsistency. He has just said that he desires the bad farmer to be rated at as much as the good, and then he says in

effect that the bad farmer is not to be rated at all. There are some farms that have been so neglected and become so foul that you cannot get any rent or only a nominal rent for them, and therefore on this basis they would pay no rates. And the bad state of the land is not always an indication of the ability of the occupier to pay. Good farmers sometimes take these farms and thoroughly cultivate them and improve them. Why should either of these classes escape their share in such national obligations as poor and education rates? And, again, whether the farm be in good or bad hands, why should the occupier escape payment for local services, such as police, lighting, and main roads? The personal aspect of taxation must not be forgotten; the fact that assessment is on rateable hereditaments tends to conceal the fact that rates are levied upon persons for services rendered. So that the land value basis singularly fails in this respect.

Pursuing his argument, the writer considers "the most valuable result to the community at large would be the using of all usable land. At present," he says, "the burden of rates is sufficient in some counties, where agricultural depression is of long standing, to render the cultivation of some farms unprofitable. As we have seen, the pure land value of such farms is nothing, or less than nothing, and they should not therefore bear any share of local taxation." Again, I would point out the ultimate personal character of taxation, and I ask why should a farmer of land which yields no pure land rent escape taxation according to ability for onerous expenditure and according to benefit for local beneficial expenditure?

The relieving of this class of land of rates would probably, for the time being, bring more of it into

cultivation; but look at the anomaly of some farmers paying rates and others not. The proposal would, in fact, if carried out, amount to a direct subsidy to the extent of the rate-relief to the owners of the land.

In some cases it would produce still more striking inequalities. The pure land value of a colliery is often very small, sometimes almost negligible. So of a factory, a railway, and other special properties. They would all obtain an enormous relief at the expense of central shopkeepers. The burden would be increased considerably where it is already heaviest.

In the next place, I think the plan would not be workable, because in some purely agricultural districts the land is without value. In such places rates are really only assessed on buildings, and I think it probable there would be some parishes with either no assessable value or so small as to be impracticable. This consideration alone appears sufficient to render the scheme unworkable.

But what I want specially to emphasise is the idea underlying this scheme. It is claimed that its effect would be to relieve industry of taxation, and that building would be encouraged by ceasing to tax improvements. I cannot see the force of the argument. A certain volume of money has to be raised as rates, and whatever be the basis as between individuals, the collective produce has to furnish the quota. This scheme would effect a redistribution of burden, but producing greater inequalities than exist now, and the supposed relief to suburban builders would find its way into the pockets of landowners.

I am, however, in favour of some plan for rating building land more equitably. Why should the owner of building land worth, say, £1,000 per acre, which at 5 per cent. is equal to £50 per annum, escape with no

taxation whatever, as he does, if his land yields no income from letting; or if he lets it at £1 per annum escape with a contribution of say 10s.?

Before concluding this branch of my subject it is imperative that I should refer to the experience of our colonies in the rating of unimproved land values. That experience is already being used as an argument for the adoption of the principle at home. I will therefore set out briefly the results, which are taken from the following publications: Cd. 3,191, Australasia 1906; Cd. 3,740, Canada 1907; Cd. 3,761, New South Wales 1907, and were supplied to the Home Government by request.

AUSTRALASIA.

South Australia.—The Report says: “Although the “Land Values Assessment Act for municipal rating on “unimproved land values was passed in 1893, no “corporation has yet availed itself of the provisions “thereof; consequently no information as to its working “and effect can be given.” But land taxes for State purposes have been raised since 1885 on unimproved land values. The amount, however, is insignificant, being only $\frac{1}{2}d.$ in the £ and an extra $\frac{1}{2}d.$ on estates of over £5,000 value. It yields only £100,000.

New South Wales.—As in the case of South Australia the report says, “No system of land tax on land values “has been resorted to for municipal purposes,” but here also there is a State land tax of $1d.$ on unimproved land values, yielding only £320,000. From a later report (September, 1907) I cull the following information.

In 1905 this province was divided into shires, authorised to levy rates not exceeding $2d.$ in the £ upon the unimproved capital value of all rateable land. An Act of 1906 extended these powers and authorised the

levying of special, local, and loan rates on either improved or unimproved values, and conferred the like powers upon the municipalities. As this legislation is so recent, information as to its working could not be supplied to the Home Government.

New Zealand.—State taxation on unimproved values is in force, and local authorities have the option of applying same principle by a majority vote. “There are 113 boroughs in New Zealand (in addition to other local authorities), and of these 18 rate on the ‘capital value,’ 52 on the ‘annual value,’ and 43 on the ‘unimproved value.’” “Of the four chief cities in New Zealand (Auckland, population 37,740; Wellington, 58,552; Christchurch, 49,808; and Dunedin, 36,075) Wellington and Christchurch have adopted the system of rating on the ‘unimproved value.’ In no case where the system of rating on the ‘unimproved value’ has been carried has the former system of rating been reverted to, and the ratepayers as a rule, with few exceptions, are decidedly in favour of the system, and the approval is strengthened as time goes on and the effect of it is seen.”

In response to a circular addressed to all local authorities rating on the unimproved values, asking for a report on the lines required for the Secretary for the Colonies, 52 replies were received. A majority were favourable to the system; 6 did not consider it satisfactory, several stated that it had not been in operation long enough to judge of it; and several drawbacks were pointed out.

As having an important bearing on the comparative aspect of the question, I would give the statutory (New Zealand) definition of “unimproved value.”

“‘Unimproved value’ of any piece of land mean

“ the sum which the owner’s estate or interest therein,
“ if unencumbered by any mortgage or other charge
“ thereon, and if no improvements existed on that par-
“ ticular piece of land, might be expected to realise at
“ the time of valuation if offered for sale on such
“ reasonable terms and conditions as a *bonâ fide* seller
“ might be expected to require.”

And in an explanatory memorandum there follows this comment: “ There are few terms used in connec-
“ tion with land valuation which are more imperfectly
“ understood than the term ‘unimproved value.’ Some
“ interpret the word to mean the *original* value of the
“ land at the time when it was in its unimproved state,
“ while others understand it to mean the *present* value,
“ assuming all the land in the district to be unimproved.
“ Neither of these interpretations is correct. The
“ increased value attaching to any piece of land due to
“ the successful working of other lands in the district
“ or to progressive works effected by the State, the
“ general prosperity of the country, high markets for
“ produce, &c., form portion of the unimproved value
“ under the New Zealand law. Any increased value,
“ however, which is represented by the improvements
“ effected by the individual possessor, either past or
“ present, does not form part of the unimproved value.”
I am tempted to quote further from this chapter on
“ Improvements,” for it is profoundly interesting in
respect of exhaustion of improvements, relation of cost
of improvements to selling values, and its rules to
guide valuers; but space forbids. I commend the whole
chapter to the study of those interested in the subject.

CANADA.

In the provinces of Nova Scotia, Quebec, Ontario,

New Brunswick, Manitoba, Prince Edward Island, and Saskatchewan, the system is that of the mother country, viz. annual value of land and buildings together. In British Columbia the basis for provincial rating is the same, but for municipal rating land and building values are separated and separate rates levied on each. In Alberta the larger areas are rated at so much per acre, irrespective of improvements; in the villages our system is adopted, but by a two-thirds majority of the ratepayers the unimproved land basis may be adopted. The latter is said to be growing in favour; in the towns and cities the practice varies, sometimes it is unimproved value, sometimes the value of both real and personal property.

It does not seem necessary to me to dilate at length upon these facts. It will be sufficient, I think, to note that the principle of rating on unimproved land values in the colonies has not had a widespread application, that it is only in the experimental stage, and that the vast difference between its application to comparatively new countries and to old countries like ours would demand a searching investigation, and, if my arguments be sound, lead to its rejection as unsuitable and inequitable in the case of the motherland.

LAND NATIONALIZATION.

I say frankly that I approve of the proposed separation of site and building values because, in addition to other advantages, we should have a basis for any future dealings with land values and a perfect measure of unearned increment. I confess, however, that I do not see how the land alone could be nationalized. It is one thing to have land values as a basis for rating and another to use them for expropriation. Not that the

operation is in itself difficult, but the consequences are so formidable.

If the land alone be nationalized, the buildings are left private property. The operation might be conducted in one of two ways, by the process of extinction by terminable annuities or by the issue of irredeemable stock. In the former case, unless the buildings are nationalized also, the extinguished values would at once re-attach themselves to the buildings, and the last state is worse than the first. In the latter case, the only benefit is that by employing State credit the annual interest is reduced, but the capital debt remains unchanged, and any additional unearned increment attaches to the buildings and would pass into the pocket of the building owner instead of that of the landowner. The only way to prevent this would be to compute the value of the land from time to time which would amount to so great an interference with the builder or capitalist that the entire nationalization of land and buildings would seem preferable and perhaps be inevitable. So that any attempt to nationalize the land appears to involve almost certainly the nationalization of buildings.

John Stuart Mill shrank from proposing the total expropriation and extinction of unearned increment, and advocated only the appropriation of accruing future increase. If we continue to prosper this step would result in securing some benefit for the nation; but if it is a proper thing to secure a part, it must be a proper thing to secure the whole.

Following on similar lines to Mr. Mill, "Mr. Haldane
"lends his high legal authority to a Bill for enabling
"county councils to value lands to-day, and retain the
"option of purchasing them at a future time at a price
"from which every fragment of unearned increment

“ shall be excluded, but which shall be increased by the
“ value of any improvements subsequently made by the
“ owner.”*

Herbert Spencer declares that to justly estimate and liquidate the claims of the present landowners, “ who
“ have either by their own acts or by the acts of their
“ ancestors given for their estates equivalents of honestly
“ earned wealth ” is one of the most intricate problems
“ society will one day have to solve.”†

Speaking in the House of Commons on the 6th May, 1890, Mr. John Morley said: “ The question of the un-
“ earned increment will have to be faced. It is unendur-
“ able that great increments which have been formed by
“ the industry of others should be absorbed by people
“ who have contributed nothing to that increase ; ” and, at an interview at Newcastle in November, 1899, he remarked on a kindred subject, “ I have always thought
“ our forefathers made a great mistake when they did
“ not reserve the minerals to the nation.”

Very many towns and districts on the continent, especially in Germany, have at various times purchased varying quantities of land and have greatly relieved or wholly defrayed their local burdens by obtaining the increased values and applying them to local expenditure. The laws of this country forbid the acquisition of land by municipalities, but it is probable that forthcoming legislation will remove this disability. Logically, these purchases in part cannot be justified. If it be good to purchase part of the land of a town, it is better to purchase the whole. This plan of partial purchase involves the necessity of leasing the land so acquired, because if it is re-sold at any time the advan-

* *The London Programme*, by S. Webb, p. 196.

† *Social Statics*.

tage to the authority is temporary instead of permanent.

It is an objection to any partial expropriation that the bulk of the burden would remain upon old towns, whilst new districts, where the growth of value would be appropriated from the outset, would be fortunately placed and have a special advantage. This is an objection to be urged against the system in Germany. Those authorities which have bought land have by means of its increased value covered to a large extent the expenses of their districts, whilst neighbouring districts which have not taken that course are saddled with varying rate burdens.

· EXTENSION OF POWERS OF LOCAL AUTHORITIES.

I pass now to consider a few problems in connection with urban life, of much interest at the present time in view of probable legislation. These all involve an extension of municipal control, or in other words an application of the socialistic principle.

At the present time housing reformers are advocating the purchase of land by local authorities as one step towards a solution of the housing difficulty. One great advantage which accompanies public ownership is that when the land is developed for building it can be laid out on the most approved modern principles, so as to obtain for the dwellers upon it the maximum of health, recreation, and pleasant surroundings.

It has, however, been observed, as might have been expected, that sales of public land in Germany have not helped in solving the housing problem, because, as the Council of the City of Frankfort states: "Repeated experiments have shown that speculation is not hampered if the town sells land outright. The town

“ cannot prevent land which it may sell at a cheap price
“ from being put up in price unfairly by private indivi-
“ duals, and the benefit being confined to those who first
“ buy from the town.” Certain towns endeavour to
avoid this by stipulations of sale. At Ulm the town
sells on condition that it shall have the right of re-buy-
ing if the land is sold again.

In order to avoid these results the leasehold system
is being adopted in Germany, so that the local authorities
may retain the ownership of the land. If the local
authority lease its land, then the lease must be suffi-
ciently long to encourage builders to build. By
granting long leases it deprives itself of much of that
unearned value which accompanies development, and as
a consequence builders and dwellers upon the leased
land obtain a bounty in the shape of lower rent, while
land owned by private persons attains maximum prices.
In short, all piecemeal dealing with land by local bodies
can be impeached on logical economic grounds—the only
consistent policy is that of complete public ownership.
If the burden of rates is relieved by applications of
unearned increment from part only of the land in a
given area, the logical conclusion is that the whole
increase on the whole area should be so applied, or, if it
exceed the amount required for rates, to some other
beneficial purposes. “ As a means of ensuring that the
“ community shall enjoy the unearned increment, Frank-
“ fort has handed over public land for 44 years to a
“ company for the enlarging of the electrical works.
“ The rent at first is 500 marks, but it is to be revised
“ every 10 years and to amount to 3 per cent. of the then
“ value of the land.” With regard to this, it is clear
that the local authority obtains practically the whole of
the unearned increase, but it is then exactly in the

position of a private land speculator, in no wise lessening the price of land and in no wise solving the housing problem.

Whether the time is ripe or not for land nationalization, it is high time that the hands of the local authorities were strengthened in regard to the manner of development of land in their districts. The owners of land, however small in extent, can run roads where they like over it. They do so without regard to the way in which new roads join existing roads and main thoroughfares. All that is considered is the turning to fullest account of every square yard of land. In no case do they consider whether the new roads will, when continued, be at all suitable for the development of the land of adjoining owners. Nor is it to be expected, under an individualist régime, that they should. But here is obviously a case for public control. Land should be developed not according to the whim of an individual owner, but in a systematic manner for the best interests of the people.

There are plenty of cases in which roads are made through narrow strips of land, and then steps taken to prevent their continuation through neighbouring property. In these cases, instead of these roads meeting other roads beyond at right angles, there is the ridiculous spectacle of their junction being blocked by the erection of houses. There are many ways of preventing this junction or continuation of roads even without the erection of buildings—by the reservation of a strip of land or the erection of a wall or fence at the end of the new road. I am I hope as keen as any other surveyor in advising my clients to protect their interests in this way when circumstances require, but, from the point of view of a sensible and orderly development of a town, such obstruction is obviously absurd. Similar difficulties

occur with regard to levels of roads. The owner of a building estate pays no regard to the levels of adjoining land in fixing the levels of his new roads, and local authorities either have no power to regulate this or do not appear to exercise it

Then the areas of the authorities are not developed on any rational lines. Which part of a town or place shall be built upon is determined not by the needs of a district, but by the whims of owners and the whims of buyers and speculators. Acres of ripe land remain unbuilt upon, whilst less ripe or even unripe land is utilized. Workmen are driven beyond the outskirts of a town, in order to preserve some wealthy resident's uninterrupted view or to enable him to reap unearned increment.

I would refer also to the manner of constructing on private land in developing districts roads which are often unworthy of the name. About the only thing that is done sometimes is to leave a width of 36 feet. What this means to the poor and the working classes, often thinly shod as they are, is known only to those who use such roads. In summer time they are heaps of dust and full of holes, in winter heaps of mud and full of pools, and with deep ruts always. Often they have no curbing, no channelling, and nearly always no decent footpath. When they are sufficiently lined with houses the local authority orders them to be properly constructed and takes them over, but meantime the residents suffer. It only seems reasonable that if houses are erected there should be a proper road to them, and it would appear eminently desirable to empower local authorities to require such a road to be constructed before allowing the houses to be occupied.

The erection of houses in those parts of the districts

of an authority obviously best adapted and most required for the purpose would allow the construction of good roads. I feel sure that it will shortly be recognised as desirable that the direction of roads should be fixed at once in growing districts, so that each landowner may know where they will cross his land. I see no difficulty in a district surveyor laying out these routes. He would have regard to the levels of the district, avoiding as far as possible steep ascents and descents, and generally following those rules of prudence observed in the construction of railways and main roads. The result of our present system is that each owner has his own little arterial system of roads with no regard to adjoining land and no consideration of public convenience. Speculation in unripe or partly ripe building land leads also to an uneconomical expenditure of public money. Sewers, gas and water mains have to be carried to such land past land thoroughly ripe for building, but not being utilised.

It is difficult to see how many of these evils can be cured by anything short of acquisition of the land, and they point to municipalization or nationalization as the remedy.

There is little doubt that this question of land values is about to undergo the most searching investigation it has ever passed through, and I would suggest that it behoves surveyors not merely to become passive resisters, or to assume the *non-possumus* attitude, but to bring to bear upon the matter all that mass of experience and information which an intimate association with land gives and which qualifies them, more than any other body, for dealing with the subject.

Mr. HOWARD CHATFIELD CLARKE (Fellow) said

he rose to speak with some diffidence knowing that there were many present more fully conversant with the matter than he was, but he was somewhat relieved by the thought that those who followed him would much more than make up for his deficiencies. It, therefore, only required a few words of his to move the resolution that the Meeting should give a very hearty vote of thanks to Mr. Crampton for his able and—he might perhaps be allowed to say—breezy and interesting Paper. It dealt with the subject from the side which was not very often taken in that room, and for that very reason he thought especial and doubly hearty thanks were due to the author, who had shown the importance of looking on the matter from both sides and taking a broad view of this great question. He entirely agreed with the last sentence in the Paper that Surveyors could do no good by taking up a *non possumus* attitude in regard to the matter.

The question of the taxation of urban land values was coming to the front and must be faced, and it was important that such a body as The Institution should lead rather than be led with regard to it. He did not believe that the nationalisation of the land of this country would ever be a practical question, certainly not in the time of the present generation.

In dealing with this matter it seemed to him there were two main propositions to be considered, which were of fundamental importance but were too often overlooked. First that land differed from any other commodity because of the limitation of the amount available, from which most of the trouble arose. Secondly, there was the fact that a large proportion of the community depended for its very existence on living in certain defined parts. Then came the question whether new sources of taxation

were required. If they were, could the present occupiers and lessees bear the additional burden? In dealing with this matter no government ought, and he did not believe any government would, interfere with any existing contracts. It should be made clear that all contracts at present existing must be left intact.

With regard to the possibility of the division of land and building values he agreed with Mr. Crampton. He did not really see any practical difficulty. It might take time; but it was being done every day in compensation cases or in dealing with mortgages.

One of the first things done in checking valuations was to put the land value and the building value separately, and he personally did not see the difficulty which Dr. Murray anticipated in the matter.

He also agreed with the author when he said: "The fact is that each generation builds and improves for itself and not for the remote future. And the further fact is that each generation is heir not only to the natural powers of the earth, but to all that remains of the work of past generations." That seemed to him the basis on which to start.

But having done that, was anyone better off? If increased rates would decrease rent—which seemed to be the argument used—a builder or speculator would consider the amount of rates and taxes and allow for it, and surveyors knew that in the suburbs rates were going up and land values going down in consequence of the increased rating. Would that apply to land in the centres of towns? He did not think that it would, for the very good reason that many persons were compelled by their occupation to live in the centres, and to them the shifting of the incidence of the rates would make no difference.

But one could not but feel that in the case of an owner of land worth for building, say, £1,000 an acre, who paid rates only on its agricultural value, some equitable means ought to be found to remedy the anomaly. That, of course, applied principally to building land on the edge of towns.

With regard to the development of through roads on estates, which had been referred to in the latter part of the Paper, he thought all would agree with the suggestion of the Chairman of the Tribunal of Appeal that the County Council or the local authority ought to be empowered to control the planning of such roads. This must be for the benefit of everybody, and a great saving on the cost of drainage, lighting, and water supply. How that was to be accomplished was another of the problems which awaited solution. He would conclude, as he had begun, by saying how fully he appreciated the value of Mr. Crampton's most suggestive Paper, and proposing a very hearty and sincere vote of thanks to the author.

Mr. E. J. HARPER (Fellow) said it gave him great pleasure to second the vote of thanks to Mr. Crampton. Whatever might be the differences of opinion on the theories advanced in the Paper, he was sure there would be general agreement that the subject had been treated with a freshness and boldness which added greatly to its interest.

In discussing such a vast question it was impossible to attempt to cover the whole, or any considerable part, and he proposed therefore to confine his remarks to the one part of the subject in which he was personally most interested, and would speak, as he felt free to do at a

Meeting of The Institution, entirely apart from any consideration of political views. He was glad to have the opportunity in that room of approaching the question on sound business principles and from a professional standpoint.

He was not concerned with the earlier part of the Paper dealing with the taxation of that unearned increment which was at present—rightly or wrongly—considered to be free from taxation, but he would rather deal with the argument that the standard by which the contribution of the dwellers in towns was now measured was unsound, and that land value would be a better basis on which to calculate ability to pay or benefit derived from local taxation. It seemed to him that, taking the present local expenditure as being necessary, the question to consider was whether the funds to meet that expenditure were now raised on the best and most satisfactory principle. In his opinion they were not.

He should like to call to mind the fact that in 1870 Lord Goschen, when he presided over a Select Committee, submitted a report on Local Taxation which was now a classic, and took as his cardinal starting point the fact that when the landowner and the builder were negotiating to fix a ground rent, both knew roughly what must be spent to build the house, what rent it could bear, and what rates would be levied on it, and as a result of considering those three factors the ground rent was fixed.

It was obvious that if the rates were high the ground rent must be lower, and if the rates were low the ground rent might be higher. Therefore, whatever happened, the whole burden of the rates must practically fall on the landowner, who allowed for them in fixing the ground rent. But the Committee made what seemed

to him a serious mistake in regarding the lessee or holder of a 99 years' lease as an occupier only. He might happen to be the occupier, but if he were he was also something else—he was for the term of his lease a part proprietor of the land and what stood upon it, and if, as might well happen in a long term, the land value considerably increased, the freeholder got no benefit of that increase (except perhaps by way of additional security), but only received the ground rent as originally fixed and no more. Any increase of value came into the pocket of the lessee or his representative for the time being, and in that way, although the value would be increased and the amount of rates would be consequently greater, the lessee who would bear the burden would also have the increased land value over and above the ground rent to pay it out of, and so the burden of the rates would still continue to fall on the land value.

In the case of short leases it was difficult to get economists to see that as the value rose or fell the same thing happened, and if the burden of rates increased it was always paid out of increased land value, whether it was actually collected from the owner, the lessee, or the sub-lessee. It was, however, hardly necessary in a Meeting of The Institution to labour that point.

But in cases where land values were falling, as was the case in some districts, the freeholder was obviously receiving a larger amount of ground rent than the true value of the land justified, while the amount of rates levied would be reduced because the rateable value would be less. The freeholder in his original allowance for the rates had not foreseen the fall in value, but in fixing the ground rent had calculated for more rates than now actually fell on the property. Whether land value were going up or down, it seemed to him that the

burden of the rates must really fall on the man who owned the land for the time being, whether as freeholder or lessee.

If that were so, why should the liability be measured by something quite different, namely, land plus buildings? Why not measure it according to the value of the one element out of which alone it arose?

It seemed to him that if rating were to be on a purely scientific basis he might leave the case there as sufficiently proved. The land being the source of rates was the proper measure of capacity to bear the burden.

But he would go a step further, and point out a serious drawback to the inclusion of buildings in the same assessment with the land.

The question arose, as Mr. Chatfeild Clarke had said, on the margin of the towns. The rateable value of the land in the case of a small house in the suburbs was probably one-sixth, and the value of the building five-sixths. That meant that in such a case the land would have to bear just six times the burden if the rates were levied on the land alone. Did not that account at once for the tremendous time that land took to ripen for building? Building land in the suburbs was not ripe until the value was such that there was enough and to spare to pay the rates after fixing a reasonable ground rent, and, while the land was steadily growing in value, until it reached that point it could not be used to the best advantage.

That single fact alone was a serious hindrance to the growth of towns. It was a bad thing for the landowner and a very serious matter for the dwellers in towns, especially the poorer classes, because the supply of houses was thereby reduced while the demand remained the same or tended to increase, and the

standard of rent consequently rose above the normal level.

So it came about that in all great towns thousands of people were living overcrowded and in miserably inadequate accommodation. It was not because they chose that kind of life, but simply that they could not afford to pay the rent required for the rooms necessary to house them in decency.

If the burden of the rates were removed from buildings, and measured by the value of that element out of which they came, namely the land, the change would at once on the margin of the towns reduce that burden by anything up to five-sixths. This would bring a large amount of land into building. No one would be likely to build houses unless there were a reasonable prospect of getting them occupied, and the people who would occupy those large additions to the number of available houses were those now overcrowded in the towns, who could not afford to pay rents at their present level. The building lessee would therefore not build unless he were able to let at a distinctly low rent, but on the other hand the owner having to bear the rates on the value of his land, would be anxious to develop it in order to get a return. The two things coming together, the new demand and the low rent, would result in ameliorating the unhealthy and insanitary conditions which at present frequently prevailed.

There was much misapprehension on this subject, and he hoped the Members of The Institution would apply themselves to the study of the question seriously and dispassionately, apart from all political views, as practical men concerned with the best interests of property and of the community at large.

Mr. J. H. SABIN (Professional Associate of Council) said he entirely agreed with the premises which he, the author of the Paper, had laid down—that the public rates fell ultimately upon the land, the burden resting upon either the freeholder or the man who acquired an interest in the land.

But he failed to see what difference it would make if rates were, say, 5s. in the £ on the value of the land and buildings, or 20s. in the £ on the land alone. If the total amount of rates to be raised were not reduced, then, as Mr. Crampton had said, whether it were paid by A or B made very little difference.

He thought all would agree that if Mr. Harper, with the power of a benevolent despot and in the interest of all parties concerned, were authorised to draw up a scheme of local taxation which would do strict justice to all parties, the matter might well be left entirely in his hands. But it was no secret that the aim of those who desired to deal with this question of the taxation of land values was to get something more than at present, and to get that something more from the pockets of a particular class of the community, namely those who held the freehold of the land.

That was the aim which Dr. Murray endeavoured to oppose in his Paper read at the Glasgow Meeting. That was a proposal against which he thought, on the whole, surveyors desired to protest. It must be remembered that at the present moment unearned increment was taxed, and not only the unearned increment on land, but the unearned increment on other things besides land, and to make his point clear he would venture to re-read the first paragraph in Mr. Crampton's Paper, thus: "I believe it is practically undisputed that enormous

“ sums of money have been secured by owners of pictures
“ as well as of land without personal effort, in con-
“ sequence of the growth and industrial development of
“ various countries and the increase of taste for articles
“ of art.”

He saw no reason whatever why the owner of a particular piece of land which happened to increase in value should be taxed more than the judicious purchaser of a work of art, which might increase in value from time to time, and bring to him or his successors a very large sum of money, without any effort on the part of the purchaser or his heirs.

There was, he believed, a time when, to some extent, land might be taxed as other articles were not; and some few years ago, when discussing the question, he suggested that an estate duty on land as well as on other property would practically do what John Stuart Mill, Herbert Spencer, and others advocated, namely, reach the unearned increment.

When Sir Vernon Harcourt's Act of 1894 was placed on the statute book it seemed to him that the law had gone as far as was just or right in the direction of the taxation of the unearned increment. At death the man who had owned the unearned increment had no longer an interest in it. It might be said that the man who was about to inherit it was not justly entitled to it, but the State stepped in and valued the estate, and on that value placed a tax which if taken at the highest rate, say 10 per cent., represented one-half per cent. for a period of 20 years.

There was the great advantage in such a method of taxation that if the estate lost its value justice was also done, for where agricultural land had decreased in value

the heirs on the death of the owner paid the tax on the lower value. On the other hand, when an estate had increased in value the heirs paid a tax on the unearned increment which had arisen during the lifetime of the last owner.

In that way the owner of uncovered building land was taxed. He was at a loss to understand Mr. Crampton's argument that uncovered building land should be taxed, because while on the one hand he said it was probable that the imposition of a site value rate would tend to make the owner more ready to sell, and so lower the price of the land, on another page he said he was in favour of some plan for rating building land more equitably. While it was contended that the imposition of a site value rate would tend to lower the price of the land, the author added, "But when the new owner
" has got it he will have to pay a site value rate which,
" with the price he has paid for the land, will make up
" the original value or nearly so, and the interest
" upon the total will fall upon the occupier as rent." The two arguments seemed to him to negative one another.

He was not very clear whether Mr. Crampton was in favour of land nationalisation and municipalisation or opposed to it. He suggested in one place that it was impossible, while in another he said it was the only escape from certain difficulties. The Institution was deeply indebted to Mr. Crampton for his Paper, and he entirely agreed with Mr. Chatfeild Clarke that it was well to hear both sides of the question, but he could not help remarking that the author, "willing to wound and
" yet afraid to strike," "letting 'I dare not' wait upon
" 'I would,'" had not said in so many words whether

or not he wanted nationalisation for the whole of the land of Great Britain.

He fully agreed as to the need of control in opening up building sites. He thought it a crying evil that some small landowner (and it was generally the small landowner who created the difficulty) should have it in his power to prevent some considerable public improvement being made by setting up some bar across the end of a road he might have formed. He believed that a kindred society had in hand the promulgation of a Bill to secure to the municipality the control of the laying out of estates. Such a statute would be especially welcome to those who had to deal with building estates in the neighbourhood of large towns.

Mr. MARTIN VIGERS (Fellow) said that one point had not, he thought, been touched on by either of the previous speakers to the Paper, namely whether it was possible to separate the value of land from what was termed the value of the buildings. He thought all would agree that land, apart from the purpose to which it was put, had no practical value whatever. As building land it formed the foundation upon which the superstructure was raised, and his suggestion was that it was as much a part of the building as the walls or the roof. A building without a foundation would be impossible. It was quite true, as Mr. Chatfeild Clarke said, that surveyors, when valuing a building frequently put one price upon the land and another upon the superstructure, and added the two sums together to arrive at the value of the building, but the two were parts of a whole; the bricks, timber, &c., forming the superstructure having no value without the land, and the land no

value without the superstructure. It was suggested that in the rate book there should be a land value and a buildings value; but surely that would be illogical, for there was no value in the one without the other.

Supposing that a surveyor set out to value, under that system, a street of houses. He came to a house and assumed the superstructure to be removed, and might say that the land was worth so much, but he was regarding it as part of a building and not as a piece of land only. Until the superstructure was built up the value of the land was dormant, and surely dormant value, or prospective value, was not a subject for rating, as rating was understood by the great majority of surveyors. Then in the case of the next house he had to assume that the first was rebuilt, and went through the same operation with the second house. Was it not practically impossible to carry out such an idea as that?

But Mr. Crampton said that the separation of the value of land from buildings was already done under the Agricultural Rates Act. Was that so? Under that Act, when farm buildings were valued, was it not the fact that the piece of land on which the structure stood was valued as part of the building? That was how he had always valued.

Mr. A. E. BAYLIS (Professional Associate) said that at that late hour he would make his remarks as brief as possible; but Mr. Sabin had raised a point on which he would like to say a few words. It was suggested that the unearned increment of value on pictures could be taxed quite as justly and logically as the unearned increment on land. With that he quite agreed. But the suggestion rather raised the point whether rates should be regarded

in quite the way in which they were now usually dealt with. It was customary to consider rates as something which must inevitably be a charge on certain hereditaments, and not, as they actually were in the end, as a tax upon income. Whether the rate was paid at so much in the £ on the rateable value of a tenement or a similar sum were paid to the Exchequer in any other form, in the last resort it became a payment out of the income of the payer. There were many examples in the Paper of cases in which ratepayers were under the present system paying a considerably varying proportion of their income for exactly the same benefit received. The professional man with £1,000 a year perhaps got off even more lightly than the small tradesman making £150 a year. Why should that be? Why should not the professional man contribute in proportion to his income to the necessary expenses of the corporate and civic life as well as to the necessary expenses of the national life? That appeared to him to be the logical way out of the difficulty.

As Mr. Crampton had said, rates were usually payment for services rendered. They had been divided into "onerous" and "beneficial" by the Royal Commission, but it seemed to him the division was not quite an accurate one. For instance, he should not consider the education rate an onerous one. It was quite as much for services rendered as a rate for the provision of a new sewer. He should put it rather that rates which were necessary owing to the conditions of society and perhaps to the weakness of human nature, such as the Police Rate, or to the imperfect organisation of industry, such as the Poor Rate, were pure and simple taxes, but a rate for sewerage, for education, or for waterworks was absolutely and only payment for services rendered. The want of

discrimination between the two led to much misconception, and he was afraid to some bitterness of feeling in municipal and civic life generally.

As to whether a rate should be levied on unoccupied land, it appeared to him that if a landowner had a certain income from various sources and was also the owner of certain unoccupied land, taxing his actual income would do nothing to bring that land into the market, but it might be possible to follow the example of Germany and tax the potential income from the land at, say, half its building value so long as it was left idle.

If the land were out of use the owner had naturally no income, but the capital value was there, and in one particular case in Germany this was proved by the fact that the owner, who had previously paid £4 16s. on the *use value* of his land, contributed, on its *capital value*, £700 a year, and consequently the land came into the market.

It seemed to him that in making any such change in this country Members of The Institution would in most cases have to be consulted, and he was sure they could be trusted to consider not their own interests solely, but the national aspect of the case as well. He did not believe that surveyors would consider every proposal to alter the incidence of rates as necessarily detrimental to the interests of property. It appeared to him that most architects, surveyors, and engineers would be glad to get away from the thrall of the financier and the speculator, and that—whether by nationalisation, or taxation, or in whatever form—any equitable settlement of the present anomalies would be welcomed by the members of the creative professions as well as by the community.

Mr. B. P. RIDDETT (Professional Associate) asked

with reference to the control of the planning of roads on new estates, whether the Public Health Acts Amendment Act of 1907, which came into force on the 1st of January, 1908, would not meet the case. Was it not now in the power of any local authority wishing to adopt that Act to fix, under Section 17, the direction or the number of the roads on any new estate?

The PRESIDENT said it was not easy to answer that question off hand, but so far as his experience went, no municipality had at the present time any power to align main roads through estates, in fact he might say that councils and large municipalities in the north were now seeking such powers, and were formulating a Bill by which they hoped, by common agreement, to bring the matter before the present Session of Parliament.

At the present time there was no power whatever so far as he knew, by which any local authority, city, or borough, could align a main road through an estate. If it were desirable that it should be done it would be necessary to go to the Local Government Board, who would send down an inspector on whose report authority might be granted to go to Parliament for an Act to do what was suggested.

It was true that the Act of last year gave power to a local authority to fix the beginning and end of new streets, but they could not originate and align the streets *per se*. When an owner proposed to make a street through his land, the authority had jurisdiction with regard to the line of the street, to prevent it clashing with other existing streets, if any, on or at the end of the proposed street. No public authority had at present the power to originate the alignment of main roads.

Clause 17 of the Act referred to gave power to vary and alter the intended position, direction, termination or level of a new street, so far as was necessary to secure more direct or convenient communication with any other street. It was only when an owner proposed to make a new street through his land, and streets were already in existence on adjoining lands, that the authority had any power to vary the plans. If there were streets at one end but no street at the other, the authority would have power to vary the plan only at the one end. This, it would be seen, was a very different matter from the local authority having already power to lay down any considered scheme of streets for the whole area likely to be built upon.

The vote of thanks having been put to the Meeting and carried unanimously, Mr. Crampton in reply said he was greatly obliged to the President and Members for the very kind way in which they had listened to his Paper, and for the very hearty reception they had accorded to him as the author. He thought that in view of the lateness of the hour his best way would be to adopt the suggestion that he should reply to the comments on his Paper in the next part of the *Professional Notes*. And with the permission of the Meeting he would adopt that course.

But he could not leave his place without again expressing his very cordial thanks to the Members present for their kindness, which he felt quite repaid him for any trouble the preparation of the Paper had involved.

The Meeting then adjourned.

THE RAILWAY FIRES ACT, 1905.

BY H. COLLEY BRIERLEY (PROF. ASSOCIATE)

AND

W. H. CHRISTY CLAY, A.M.I.C.E. (PROF. ASSOCIATE).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION held on Monday, February 10th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

In submitting a Paper dealing to a great extent with legal matters, it is our wish to explain that we have endeavoured to treat the matter merely as surveyors and not as lawyers, and we hope that this will be accepted as an excuse for any absence of, or departure from, legal technicalities.

The right of farmers and others to compensation for damage to property by fire caused by sparks from railway locomotives has up to the present time been defined by a series of decisions, from *Rex v. Pease** in 1832, to *Atherton v. London and North Western Railway Company* † in 1905.

* 4 B. and Ad. 30.

† 21 T. L. R. 671.

By Section 86 of the Railways Clauses Act, 1845, power is given to a railway company "to use and employ locomotives, engines, or other moving power," and it has clearly been decided in the above cases that this section of the Act operates to absolve a railway company from the liability, to which they would otherwise be subject, for a fire caused by sparks from an engine, provided no negligence can be shown.

It should also be noted that by Section 114 of the same Act engines must be constructed so as to consume their own smoke.

In order to secure this immunity from liability under the 86th section, the company must prove, as they usually can, that the engine is fitted with the best known appliances for preventing the emission of sparks. The section does not protect a railway company, even when the engines are so fitted, if they are guilty of any negligence in other ways, as was shown in the case of *Smith v. London and South Western Railway Company*.*

The invention and design of apparatus to prevent the emission of sparks by locomotives has during past years received much attention from mechanical engineers, and several ingenious contrivances have been devised for arresting sparks; but the problem is beset with many difficulties owing to the ever-increasing power and speed of railway locomotives and the consequent additional strength of blast required.

The passing of the Railway Fires Act, 1905, throwing an additional liability on the railway companies, seems to have given further impetus to experiments with a view

* L. R., 5 C. P. 98 ; 6 C. P. 14.

to the invention of a really satisfactory spark arrester, though even now there is no general agreement between railway locomotive engineers, and the matter must still be regarded as in an experimental stage.

It will now be of interest to examine briefly some of the important cases which have decided the law on the subject up to the present time.

The case of *Rex v. Pease* (1832), reported in 4 *Barnewall and Adolphus*, p. 30, was an indictment against directors and officials of the Stockton and Darlington Railway for (in the words of the indictment) “using on
“ their railway adjacent and parallel to a highway loco-
“ motives with furnaces and stoves, thereby corrupting
“ the air and causing noisome smoke, &c., and exhibiting
“ terrific appearances and making divers loud explosions,
“ shocks, and noises, whereby it became dangerous for
“ the subjects of the realm to use the highway, to the
“ great terror and common nuisance of all the liege
“ subjects, &c., &c., with their horses, carts, and carriages,
“ against the peace, &c.”

The defendants pleaded not guilty.

The case was tried before Parke, J., at York Lent Assizes, 1832. The jury found a special verdict (*inter alia*): That the engines by their appearance and noise alarmed the horses of the King's subjects travelling along the highway, and thereby occasioned many accidents, but that the locomotives were of the best construction known at the time, and that the defendants used due care and diligence in the management of them, and from time to time adopted such improvements as had been discovered, and that the Special Act 4 Geo. IV., c. 33, sect. 8, authorised the defendants to use and employ locomotive engines on their railway.

The effect of the verdict was argued in the King's

Bench in Trinity Term, 1832, before Lord Tenterden, L.C.J., Littledale, Parke, and Taunton, J.J.

Judgment was entered for the defendants on the ground that their statutory authority to use the locomotives was absolute, and was in the circumstances a justification for their use, although otherwise such user would have been indictable as a nuisance.

We come now to what is probably the most important case as regards railway fires, in which the principle laid down in the preceding case was followed in the special instance of fire.

Vaughan v. The Taff Vale Railway Company (1858) is reported in 3 *Hurlstone and Norman*, p. 743, and in the Exchequer Chamber (1860) 5 *Hurlstone and Norman*, p. 679.

This was an action to recover damages for injury to a wood belonging to the plaintiff through a fire caused by sparks from the defendants' engines.

The case was tried at the Glamorganshire Spring Assizes in 1858, before Baron Bramwell. The railway line of the defendant company passed on a bank by the side of a wood belonging to the plaintiff. It was shown that previously, in 1852 and 1853, the plaintiff had written to the company's local manager complaining of danger to the wood due to sparks from the locomotives, especially if the grass on the railway banks were allowed to grow long in the hot season. Since that time the company had ordered the grass to be cut every three months, and had adopted some contrivance in the form of a wire shield to prevent the sparks flying out of the engine. On the occasion in question the grass on the banks, which had not been cut for three months, was extremely dry, as was the herbage and underwood in the plaintiff's wood. No sparks were actually seen to

fall from the engine, but immediately after the train had passed, the plaintiff's wood at a spot 50 yards from the line was found to be on fire, with traces of fire between that spot and the bank where the grass was also burning, and considerable damage was done before it could be put out. There was contradictory evidence as to whether the sparks had first fallen on the grass on the bank, or in the wood.

It was assumed as a fact that the precautions taken by the defendants were all that could be adopted to prevent the engines emitting sparks.

The jury found the defendant company guilty of negligence, and the verdict for the plaintiff was upheld by the Court of Exchequer.

On appeal to the Exchequer Chamber this judgment was reversed, and a new trial was ordered on the ground stated by Cockburn, C.J., at p. 685 of the report: "It is admitted that the defendants used fire for the purpose of propelling locomotive engines, and no doubt they were bound to take proper precautions to prevent injury to persons through whose lands they passed, but the mere use of fire in such cases does not make them liable for injury resulting from such use without negligence on their part."

The case of *Jones v. Festiniog Railway Company* was tried in 1868, and is reported in *Law Reports*, 3 Q. B., p. 733.

This was an action to recover £42 for damage alleged by the plaintiff to have been sustained by the emission of sparks from the locomotive engine of a passenger train, which set fire to the plaintiff's hay stack. It was proved by the defendants that all reasonable precautions had been taken for preventing sparks, but the plaintiff alleged that the defendants were not entitled in their

Special Act of 1832 to use steam engines. The county court judge held that the defendants were authorised by law to use steam engines on the railway, and that all reasonable precautions had been adopted.

On appeal to the Queen's Bench on a case stated by the county court judge, the question was "whether the defendants were authorised to use steam locomotive engines on their railway so as to exempt them from liability for injuries done to adjoining property by reason of their using such engines and reasonable precautions being adopted by the company to guard against such injuries."

The Court, Blackburn and Nash, J.J., reversed the judgment of the county court judge, and ordered a new trial on the ground that the special Act conferred no authority to use locomotive engines.

Mr. Justice Blackburn in giving judgment said :

"The general rule of common law is correctly given in *Fletcher v. Rylands* * that when a man brings or uses a thing of a dangerous nature on his own land he must keep it in at his own peril, and is liable for the consequences if it escapes and does injury to his neighbours. Here the defendants were using a locomotive engine with no express parliamentary powers making lawful that use, and they are therefore at common law bound to keep the engines from doing injury, and if the sparks escape and cause damage the defendants are liable for the consequences though no actual negligence be shown on their part. The exception to this liability was first made in *Rex v. Pease*, and *Vaughan v. Taff Vale Railway Company* in the Exchequer Chamber established the propriety of that

* *Law Reports*, 1 Ex. 265, 279 ; affirmed in the House of Lords ; *Law Reports*, 3 H. L. 330.

“ decision. . . . In order to bring the present
“ defendants within the decision, it is essential to show
“ that their Act authorised the use of locomotive engines,
“ and it is not enough to show that it authorised the
“ making and using of a railway, and that there are no
“ words either prohibiting the use of locomotives or
“ showing that the legislature meant to prohibit the use.
“ Now in the present case there is nothing amounting to
“ an express authority,” &c.

The next important case to be considered is that of *Smith v. London and South Western Railway Company* (1870), which is reported in *Law Reports*, 5 *Common Pleas*, p. 98, and in the *Exchequer Chamber*, *Law Reports*, 6 *Common Pleas*, p. 14. The case was tried before Keating, J., at Dorchester summer assizes in 1869.

Evidence was given that about a fortnight before the fire the defendants' servants had trimmed the railway hedge and cut the grass, and left the trimmings and cut grass along the strip of grass between the rails and the railway hedge. On the morning of the fire the company's servants had raked the trimmings and cut grass into small heaps. The summer had been exceedingly dry. There was evidence that an engine belonging to the defendants had passed the spot shortly before the fire was first seen, but no evidence that the engine had emitted any sparks, nor any further evidence that the fire had originated from the engine, nor was there any evidence that the fire began in the heaps of trimmings and not on the parched ground around them. The fire burnt the railway hedge, and was then carried by a high wind across a stubble field and a public road, burning the plaintiff's goods in a cottage 200 yards from the railway.

By consent a verdict was entered for the plaintiff,

with leave to the defendants to move to set it aside and enter a verdict for defendants if there were no evidence to go to the jury of any liability on the part of the defendants. The Court of Common Pleas, after argument, refused to set aside the verdict, and defendants appealed. The Court of Exchequer Chamber (Kelly, C.B., Bramwell, B., Channel, B., Blackburn, J., Pigott, B., and Lush, J.) unanimously affirmed the judgment of the Court below.

Two of the learned judges adopted the words of Bovill, C.J., in the Court below, as follows: "There was, " it is true, no evidence here that the engines were of " an improper or unusual construction, or that they " were being driven in a careless or improper manner, " but seeing that the defendants were using dangerous " machines, that they allowed the cuttings and trimmings " to remain on the banks of their railway in a season of " unusual heat and dryness, and for a time which under " these circumstances might be fairly called unreasonable, and that there was evidence from which it might " reasonably be presumed that their engines caused the " ignition of these combustible materials, and that the " fire did in fact extend to the cottage, I think it is " impossible to say that there was not evidence from " which a jury might be justified in concluding that " there was negligence as regards the plaintiff, and that " the destruction of the cottage in which the plaintiff's " goods were was the natural consequence of their " negligence."

The question of the construction of engines and spark arresters has been fought on various occasions, but the case of *Earl of Shaftesbury v. London and South Western Railway Company* (1894), reported in 11 *Times Law Reports*, p. 269, is typical.

This was an action by an owner of property in Dorsetshire to recover damages for the destruction by fire of 124 acres of fir plantation, which had been set alight by "something from an engine travelling on the "defendants' railway." The case was tried in the Queen's Bench Division of the High Court and went to the Court of Appeal.

The facts of the case are sufficiently detailed in the following extract from the considered judgment of the Lord Chief Justice: "As the case was ultimately presented for the plaintiff it resolved itself into the "substantial question whether the engine was one of "such faulty construction that its use by the defendants "amounted to negligence causing damage to the "plaintiff. The engine in question was one admittedly "of proper construction generally, but it was fitted "with a comparatively modern invention known as an " 'Adams vortex blast,' and was not fitted with a spark "arrester. The plaintiff's contention was that the vortex "blast increased the risk (beyond that arising from an "engine having a spark arrester and no such blast) of "particles of burning fuel, and of comparatively large "particles of such fuel, being forced through the tubes "of the boiler and particularly through the lower tubes "and carried out through the funnel of the engine. "The defendants' case, on the other hand, was that the "use of spark arresters was being abandoned by railway "companies generally; that the Adams vortex blast "equalised the blast, caused less disturbance in the "furnace, rendered the engine less liable to emit sparks, "and made it more effective in its action. I directed "the jury that, inasmuch as railway companies have "the authority of the legislature to construct and work "their railways, they are not liable for anything that

“ occurs in acting on that legislative authority, provided
“ always that they act with reasonable care. The ques-
“ tions left to the jury were these: (1) What caused
“ the fire? Answer: Something from the engine.
“ (2) Was there negligence, and if so, what? Answer:
“ If a spark-arrester had been in use upon the engine
“ the danger would have been minimised. And in
“ answer to the third question, the damages were fixed
“ contingently (should the plaintiff be entitled to judg-
“ ment) at £400. It must be taken that the answer to
“ the first question meant that the fire had been caused
“ by some particles of burning fuel carried up and
“ emitted from the funnel of the engine. Counsel
“ agreed to accept these findings, leaving me to draw
“ such proper inferences from the facts proved as were
“ not inconsistent with such findings. . . . I am of
“ opinion that, on these findings, the plaintiff is not
“ entitled to judgment, but that the defendants are.”

It will be seen from this case that it is apparently unnecessary for an actual “ spark arrester ” to be fitted to the locomotive, so long as the best means of preventing sparks are employed, and it was here shown that an “ Adams vortex blast ” was as efficient for preventing sparks as an actual “ spark arrester.”

The last case we shall consider is that of *Atherton v. London and North Western Railway Company* (1905), reported in 21 *Times Law Reports*, p. 671.

This was an action for damage to the plaintiff's eye by a spark from an engine, which occurred when the plaintiff was leaving the station by a path on the company's land.

The path was not screened from the line, and a petition had previously been presented to the company pointing out the danger from sparks, and asking that

the path should be protected by a covering, but the company refused to accede to the request. There was evidence that engines in starting from the station were liable to emit sparks.

There was no evidence of negligence on the part of the company in the construction or working of the engine.

The Court of Appeal held that as the defendants had provided a means of exit by this path upon their own land, and as they knew of the danger from sparks to passengers using this exit, there was evidence of negligence on their part in not providing a screen to the path, which could have been done at small expense, and the jury were entitled to find a verdict for the plaintiff.

This case shows that where a railway company knows that special danger from sparks exists, and it has been repeatedly warned and could take steps which are not unreasonable to prevent damage, it is bound to do so.

These cases seem to have made the law quite clear on the question of claims for damage caused by sparks from locomotive engines, but it has been thought by some that an unfair burden is thrown on farmers, in that they may be subjected to considerable pecuniary loss by fire, for which in ordinary circumstances a claim for damages would prove untenable. It may perhaps be argued that the fact of agricultural land being adjacent to a railway has a decidedly depreciatory influence on its rental value, but any such disadvantage would seem in most cases to be more than counterbalanced by the benefits conferred through increased traffic facilities.

It may well be contended, however, that compensation for the additional danger of fire has already been paid by the railway companies at the time of the original

acquisition of the land, for under Section 63 of the Lands Clauses Consolidation Act, 1845, in estimating the purchase money or compensation due to an owner for land taken, the damage likely to be sustained by other lands injuriously affected has to be taken into account, and it would seem to follow that the additional risk of fire is included under that heading. This, of course, only applies to lands acquired since 1845, unless the special Act previous to 1845 contained a similar provision.

The above argument seems to have been borne out in *re Stockport, &c., Railway Company* (33 L. J., Q. B. 251), in which case a claimant owned a cotton mill and adjoining land. A railway company took the land and constructed a railway on it. The claimant was held entitled to damages for injury to the mill by reason of the risk of fire being so much increased by the proximity to the railway as to render it less fit and convenient for the purposes of a cotton mill.

A case can well be supposed where an owner of land adjoining a railway has part of his land taken for the railway and receives compensation from the railway company. He receives less rent from his tenant on account of the tenant's increased risk of loss by fire, and the tenant with his saving in rent can insure his risk.

On the other hand, a person whose lands have not been taken can recover no compensation on the making of a railway in respect of damage likely to be occasioned by subsequent user as distinct from damage due to construction, *i.e.* damage to be apprehended from the use of the works authorised, as, for example, damage from fire caused by sparks from engines, which might reasonably be expected to occur from time to time.

In *Vaughan v. Taff Vale Railway Company*, one of

the pleas put forward was that a landowner is compensated under the Lands Clauses Consolidation Act for any damage he sustains. In that case, however, there was no evidence that any of the plaintiff's land had been taken by the company or that he had received compensation for any land that had been taken by the company or might, under the 68th section, be injuriously affected by their line.

This argument was also put forward by the then member for North Leeds (Lord Allerton, Chairman of the Great Northern Railway Company) when the Compensation for Damages to Crops Bill, 1901 (which did not eventually pass), was read a second time in Parliament.

During the discussion on the second reading of the Railway Fires Act, 1905, the same point was referred to by Sir F. Banbury and by Mr. Cripps, K.C. (an Associate of The Institution), and it will be of interest to quote briefly the *Times* account of the learned counsel's words in Parliament: "It was true that when land was " taken by a railway company the owner was provided " with a fund which, if used for insurance, would provide " against these dangerous risks, but that was not the case " with the owner of land near the railway line, none " of which was taken by the company. . . . "

It would appear therefore that if this contention is correct only landowners, none of whose land has been taken by the railway companies (and of course their tenants) will be able to substantiate a claim under the new Act—other owners having already been compensated for possible damage to adjoining lands by fire.

This point does not, however, appear to have been properly thrashed out in the courts, probably because the railway companies have in the past usually found

Vaughan v. Taff Vale Railway Company a sufficient defence.

It may be argued that it will be almost impossible to prove that vendors have been paid for all prospective damage, and that the general words "in satisfaction for all damage whether permanent, temporary, or recurring, and for injuriously affecting, &c.," used in conveyances will not bar a claim under the new Act. It will be interesting to hear the views of Members on this point.

To make the present position clear it may be well to take the Railway Fires Act, 1905, and examine it briefly section by section.

Section 1, Subsection 1, reads as follows :

When, after this Act comes into operation, damage is caused to agricultural land or to agricultural crops, as in this Act defined, by fire arising from sparks or cinders emitted from any locomotive engine used on a railway, the fact that the engine was used under statutory powers shall not affect liability in an action for such damage.

It will be seen that under this subsection the defence set up in *Vaughan v. Taff Vale Railway Company* will no longer serve to absolve railway companies from their common law liability as users of things of a dangerous nature, if they do injury to agricultural land or agricultural crops. It should, however, be noted that this section only sanctions claims in respect of damage to agricultural land or crops, and is subject to a further limitation in Subsection 3, quoted below. The defence set up in *Vaughan v. Taff Vale Railway Company* may still presumably be used in other cases which are not within the scope of the Act, providing of course that the best known appliances have been used.

Section 1, Subsection 2 :

Where any such damage has been caused through the use of an engine by one company on a railway worked by another company, either com-

pany shall be liable in such an action; but, if the action is brought against the company working the railway, that company shall be entitled to be indemnified in respect of their liability by the company by whom the engine was used.

This subsection concerns the railway companies more than the general public. It will be noticed that a private individual suffering damage from fire caused by sparks from a locomotive of one company working on the line of another company has a claim upon either company for damage, but the company *using* the locomotive must indemnify the other company in respect of their liability. The wording of this subsection appears to be somewhat vague, as instances occur in which it would be difficult to define which of the two companies was the "using" company. This subsection seems to modify Section 124 of the Railway Clauses Act, 1845, which reads as follows:

The respective *owners* of engines and carriages passing or being upon the railway shall be answerable for any trespass or damage done by their engines or carriages, or by any of the servants or persons employed by them, to or upon the railway, or the machinery or works belonging thereto, or to or upon the property of any other person, and every such servant or other person may lawfully be convicted of such trespass or damage before any two Justices of the Peace, either by the confession of the party offending, or upon the oath of some credible witness, and upon such conviction every such owner shall pay to the company or to the person injured, as the case may be, the damage to be ascertained by such justices, so that the same do not exceed £50.

Under this section the respective owners of engines and carriages are made liable for damage not exceeding £50 done by their engines or carriages.

The terms "working company" and "using company" in the subsection of the Railway Fires Act under discussion would in some cases be very confusing, although in the majority of instances the two would be synonymous.

The owners of an engine have practically always their own men in charge, the engine simply carrying

a pilot engine-driver in the foreign company's service when on a "foreign" line to show the way, point out strange signals, dangerous curves, &c. This synonym may not, however, always hold good. For illustration, we will consider a few typical cases.

CASE A. It would appear that when a complete train and engine all belonging to one company are running over the line of another company, and cause damage, the company to whom the train belongs would be liable to indemnify the other company, provided there were no negligence on the part of the company owning the railway line.

CASE B. A complete train belonging, with the exception of the engine, to one company is taken over a "foreign" line by an engine of the "foreign" company. We imagine that the foreign company would be responsible for damage.

CASE C. In the case of a train of coal trucks belonging to a colliery company, running on a branch line belonging to the colliery company, but drawn under agreement by a locomotive owned by the adjoining railway company, it is not quite clear who are the "using" company, and it seems difficult to say which would be the responsible party, the colliery company or the railway company.

CASE D. As a last example we will consider a railway company owning a line and its own rolling stock but no locomotives, and using the engines of another company, paying for them at a rate of so much per mile running. The company owning the engines might have in addition running powers over the other company's line. Which is the "using" company referred to in the Act here appears doubtful, but probably the company who hire the engines is respon-

sible, and would have to indemnify the actual owners of the engines, unless of course the point is provided for in the hiring agreement.

It may be that the points above raised are quite clear to the minds of some Members who have a full knowledge of railway traffic arrangements, but to the layman they would appear somewhat uncertain, and it seems possible that the wording of this part of the section may lead to litigation in the Courts.

It is to be hoped that there are some legal gentlemen present at this meeting who from their knowledge of the working arrangements of railways may be able to throw some light on the matter.

Section 1, Subsection 3, reads :

This section shall not apply in the case of any action for damage unless the claim for damage in the action does not exceed one hundred pounds.

By this subsection the amount of a claim under the Act is limited to £100, but where negligence can be proved, as for example in *Smith v. London and South Western Railway Company*, a claim to any extent may still presumably be made.

This limit will cover the vast majority of claims for damage to agricultural land and crops.

Section 2, Subsection 1, reads :

A railway company may enter on any land and do all things reasonably necessary for the purpose of extinguishing or arresting the spread of any fire caused by sparks or cinders emitted from any locomotive engine.

It will be seen that this subsection gives a railway company power to enter on any land, including land other than agricultural land, and to do anything in reason to extinguish or prevent the spreading of a fire which has already occurred, subject of course to paying compensation as provided in Subsection (3) of this section.

Section 2, Subsection 2, reads :

A railway company may, for the purpose of preventing or diminishing the risk of fire in a plantation, wood, or orchard through sparks or cinders emitted from any locomotive engine, enter upon any part of the plantation, wood, or orchard, or on any land adjoining thereto, and cut down and clear away any undergrowth, and take any other precautions reasonably necessary for the purpose ; but they shall not, without the consent of the owner of the plantation, wood, or orchard, cut down or injure any trees, bushes, or shrubs.

This refers to cases where a fire may or is likely to occur. The precautions that may be taken under this part are specially limited, seeing that no tree, bush, or shrub may be cut down without the owner's permission. It will be noticed that special mention is made of plantations, woods, and orchards, and it may be assumed that no power is given to a railway company's men to enter on another's land for the purpose of protecting (say) a field of standing corn.

The railway companies must therefore still run certain risks, for example, the risk of the rank dry grass in a hedge bottom causing a fire to fields of hay or corn, and of course the hedge itself.

Old dead fences adjoining the railway are a constant source of annoyance and danger, and a fire started in such a fence frequently spreads to the better kept railway fence.

This subsection would appear to be of great value to landowners who are forming new plantations adjoining railways, seeing that they will not be troubled in keeping their plants from being smothered by rank undergrowth, as they will have their plantations cleared free of charge by the railway company for the latter's own protection, and may even, on the plea for example of damage to sporting, actually obtain compensation for such benefits under the next subsection.

No mention is made in the Act as to notice being

given to the occupier or owner before the company's men enter on the land for the purpose of diminishing the risk of fire as provided for in this subsection. It seems desirable, however, that notice should be given to occupiers as a matter of courtesy. Moreover in some cases this may prevent undue damage by the company's men, as the occupier probably would then notify the company as to any special precautions necessary to be taken for the preservation of game or other reason.

Section 2, Subsection 3:

A railway company exercising powers under this section shall pay full compensation to any person injuriously affected by the exercise of those powers, including compensation in respect of loss of amenity, and any compensation so payable shall, in case of difference, be determined in England and Ireland by two justices in manner provided by Section 24 of the Lands Clauses Consolidation Act, 1845, and in Scotland by the sheriff in manner provided by Section 22 of the Lands Clauses Consolidation (Scotland) Act, 1845.

Loss of amenity in this section may be taken to mean loss of view, enjoyment, or privacy.

Thus, if trees have been planted to hide a railway, and part of these are burned down, and the remainder cut down, under Subsection 1 of this section, to prevent the spreading of the fire, the person injuriously affected would appear to be entitled to compensation for loss of amenity in respect of the trees cut down, but it does not seem quite clear whether he could claim for loss of amenity in respect of the trees *burned* down, in addition to the value of the trees. Perhaps some legal gentleman present will kindly give an opinion on this point.

Compensation under this section will probably be most frequently claimed for damage to sporting by reason of the clearing of the undergrowth. Probably, however, this will not be a very serious item.

It will be interesting here to quote the method of proceeding for settling disputes as to compensation

as laid down in Section 24 of the Lands Clauses Consolidation Act, 1845, which section also governs disputes as to compensation under this section of the Railway Fires Act, 1905.

It shall be lawful for any justice upon the application of either party with respect to any question of disputed compensation by this or the special Act, or any Act incorporated therewith, authorised to be settled by two justices, to summon the other party to appear before two justices, at a time and place to be named in the summons, and upon the appearance of such parties, or in the absence of any of them, upon proof of due service of the summons, it shall be lawful for such justices to hear and determine such question, and for that purpose to examine such parties or any of them, and their witnesses, upon oath, and the costs of every such inquiry shall be in the discretion of such justices and they shall settle the amount thereof.

It seems a pity that the Act does not lay down some definite form of procedure for settling all claims arising under the Act, without confining itself to the claims which come within the scope of Section 2.

Section 3 reads as follows :

This Act shall not apply in the case of any action for damage by fire brought against any railway company unless notice of claim and particulars of damage, in writing, shall have been sent to the said railway company within seven days of the occurrence of the damage as regards the notice of claim, and within fourteen days as regards the particulars of damage.

There is some difficulty in interpreting the exact meaning of this section. For example, it is doubtful what would be considered sufficient particulars of damage.

A case has already occurred in which the first intimation of claim was couched in the following terms, and was received nine days after the alleged fire had occurred: "I hereby give you notice that it is my intention to send a claim to the railway company for damages done by their engines on the hedges of my farm and surface. The damage was done on" (here follows the date) "you shall have the claim after

“the valuer has settled his decision.” No further particulars of damage were received from the claimant within fourteen days of the occurrence of the fire. Ignoring the fact that the notice of claim was not sent in within the statutory time of seven days, it seems very doubtful whether these vague particulars of damage (made within 14 days) would be sufficient to satisfy the Act. The section does not say that a definite amount has to be claimed in the particulars of damage, and this is probably not essential.

From the wording of this section it appears that the limit of time for sending in the notice of claim only applies to cases of actual damage by fire, and it may be inferred that compensation for injuriously affecting lands, and for loss of amenity caused by the steps taken to diminish the risk of fire in plantations, woods, or orchards under the last section, may be claimed within any reasonable time.

The Act does not, however, seem very explicit on this point.

Section 4.

The definitions as given in the Act are as follows :

In this Act—

The expression “agricultural land” includes arable and meadow land and ground used for pastoral purposes or for market or nursery gardens, and plantations and woods and orchards, and also includes any fences on such land, but does not include any moorland or buildings ;

The expression “agricultural crops” includes any crops on agricultural land, whether growing or severed, which are not led or stacked ;

The expression “railway” includes any light railway and any tramway worked by steam power.

This Act shall apply to agricultural land under the management of the Commissioners of Woods, and to agricultural crops thereon.

The definition of “agricultural land” excludes gardens attached to houses.

Whether allotment gardens are to be considered market gardens would seem to be a question of fact in each particular case, but generally we submit this would not be so. It will be noted that moorland, and in consequence heather thereon, is excluded.

It will probably in some cases be difficult to say whether certain land is moorland or not. Chambers' Dictionary gives the following definition of moorland: "A large tract of untilled ground, often covered with heather, and having a poor peaty soil."

This also is not conclusive. Moorland is particularly liable to be burned, and there have been several cases where claims have been made on a railway company for damage to sporting caused by fire on moorlands. It is, however, not an uncommon thing for moorland to be purposely fired in order to obtain a new growth.

The inclusion of fences on agricultural land as above defined is important.

The definition of agricultural crops includes any growing crops on agricultural land as above defined and cut crops on such land, such as hay in cocks and corn in stook, but if the crops are carted they are excluded even if stacked in the same field. This definition removes any temptation there might be for a farmer in financial difficulties and with a poor crop to be careless as to the proximity of his stacks to the railway.

A claim has been made on a railway company for 100 loads of cake-fed farmyard manure, carted and spread on the land and destroyed by fire. Neither of the expressions "agricultural land" nor "agricultural crops" can, it would seem, be extended in meaning to include such manure.

The last paragraph in this section includes within the scope of the Act agricultural land under the manage-

ment of the Commissioners of Woods, and agricultural crops thereon.

This is obviously necessary, as Crown lands would not be affected by the Act unless expressly mentioned.

Section 5 reads:

This Act shall come into operation on the first day of January one thousand nine hundred and eight, and may be cited as the Railway Fires Act, 1905.

It will be remembered that several amendments were proposed during the Committee stage, giving to railway companies the opportunity of proving as a defence that the damage could not be prevented or that they had adopted the best practicable means for preventing the emission of sparks. Had any of these amendments passed, farmers would not have been much better off than they were before the passing of the Act.

The postponement of the date on which the Act came into operation to January 1st, 1908, seemed only a fair compromise, for it has given the railway companies additional time to try still further mechanical means for preventing the emission of sparks, and for the invention of a really efficient spark arrester.

Commenting generally on the Act, it seems that, as heretofore, farmers will have every inducement to take such precautions as would make the risk of fire as small as possible. This seems right and proper, but we venture to urge that it would not be altogether equitable if the Act should have the effect of making the railway companies liable for fires, in cases where they had, by means of increased compensation at the time of the acquisition of the land, paid for prospective damage by fire.

Mr. CHARLES P. HALL (Professional Associate of

Council) said it was with very great pleasure that he rose to propose a very cordial vote of thanks to the authors of the Paper, who must have expended much time and trouble in its preparation. The Paper when printed in the *Transactions* would be of great value to Members of The Institution called upon to deal with claims under the Act. Perhaps the most important point raised in the Paper was the contention that compensation for additional or consequential risk of fire had already been paid at the time of the original acquisition of the land under Section 63 of the Lands Clauses Consolidation Act, 1845, which laid down that in estimating the amount of the purchase money due to an owner, the "damage likely to be sustained by other lands injuriously affected had to be taken into account." But surely that must refer to such a matter as severance rather than to an entirely unknown risk of fire.

If, however, the contention that compensation had already been paid to cover the risk of fire were right, it was rather startling, seeing that the effect would be to render the Act inoperative in by far the greater number of fires caused by railway sparks. He was unable to accept that view as correct, and, with the permission of the Meeting, he should like to give his reasons for believing that on the original purchase of land for railways no compensation was paid in respect of consequential damage by fire.

In the first place, the principles adopted by surveyors in assessing compensation were considered by a Select Committee of the House of Lords in 1845, and Rule 3, approved by them, said that damage to be assessed or paid for "must arise by reason of the construction of the railway, and not by reason of the working of the railway when completed." That rule

would seem to bar any claim which might have been put forward for compensation in respect of fires which could only occur after the railway was completed.

It was difficult to discuss, without a very full report, the case cited by the authors which refers to compensation in respect of a cotton mill. It might well be that a cotton mill was exceptionally liable to damage from fire, the material being certainly highly inflammable, and proximity to a railway might render the mill inconvenient and unfitted for its purpose, and that consideration might have had weight in fixing the amount of compensation in such a case.

For a great many years railway companies had admitted their liability and paid compensation for damage by fire, but a series of cases before the Courts were argued on the ground that the companies' statutory powers entitled them to use their engines, the sole question to be determined being whether they were guilty of negligence, *i.e.*, not using the best known appliances for the prevention of fire risk by sparks.

In all the cases which had led up to the state of the law as existing before the passing of the Act, namely that the onus of proof of negligence rested on the plaintiff, the defence set up by the railway companies had never been that compensation for this risk was paid for at the time of purchase. If that contention had been tenable, one would think it would at any rate have been argued on behalf of the companies.

He had discussed the question with many surveyors engaged in the purchase of land for railway companies, and had not been able to find one who could say that compensation had been paid for that prospective risk.

One of the oldest Members of The Institution, who about the year 1853, negotiated the purchase of land for

50 miles of main line of one of the largest railway companies, told him that compensation in respect of the possibility of fires was certainly never taken into consideration; but, on the contrary, that he had frequently assessed damage on the company's behalf, up to the date of the Shaftesbury case in 1894, before which the company had never questioned their liability.

Again, was the price usually paid on the purchase of land for the purpose of a railway company very much in excess of that given for land used for sewerage works, waterworks, and other public undertakings? Was it so much higher as to make it presumable that it was calculated to cover any risk of fire to the adjoining property for all time? He thought not. It seemed to him that anyone suffering damage from fire caused by sparks from a railway engine would in future be able to sustain a claim for damage up to the amount of £100.

He would like to consider one or two of the provisions of the Act. The first section (Subsection 1) spoke practically for itself. Subsection 2 provided for the adjustment of domestic relationships between the railway companies. It contained many very clever and interesting conundrums which he could only say he would "give up." However it distributed the liability between the companies its provisions would meet the case so far as the agriculturist was concerned.

The amount to be claimed was limited by Subsection 3 to £100. It was not easy to see why, if a railway company was legally liable, its liability should be so limited. He understood, however, that it was a compromise, it being thought possibly that this sum would meet most cases.

With regard to entry on woodlands for the purpose

of preventing fire, he thought it would probably be found in practice that the railway companies and the land-owners would work together without any friction. The amount of damage that might be claimed for game would not, he thought, be a serious matter.

Section 3, dealt with the form of claim; the example quoted by the authors was amusing, but was evidently from the pen of a very illiterate layman. He thought it would be quite sufficient, on the outbreak of a fire, to give notice that such a fire had occurred, and to follow that up within 14 days with particulars as to the wheat, oats, fences, or other things that might have been damaged. It ought not to be a very difficult matter to make out a claim in a sufficiently clear form to comply with the Act.

He did not know why moorlands should be excluded from the provisions of the Act, except that it might have been thought that the owner could more easily protect his moorlands than a farmer could his fields of growing corn. It might be possible, for instance, to do so by running a bank parallel with the railway. The authors seemed to treat the burning of a moor rather lightly, but it must not be forgotten that when an owner burnt his moor he chose his own time, and limited the area to be burnt; privileges which, he thought, a railway company would hardly be able to guarantee.

It seemed to him perfectly reasonable that a man should be prohibited from making a claim because he chose to stack his corn close to a railway, instead of at safe distance away from it.

With regard to the claim for manure mentioned by the authors, who said, "Neither of the expressions 'agricultural land,' nor 'agricultural crops,' can, it would seem, be extended in meaning to include such manure."

He did think they could, but he thought a claim could well be made under the head of *damage* to agricultural land. Manure cannot be removed from land, either by fire or by any other process, without damaging it. There were other points to which he would like to draw attention, but he was afraid he had already taken more than his share of the time available, and he would therefore conclude by again asking the Meeting to give the authors of the Paper very cordial thanks for the trouble they had taken in collecting so much interesting material and preparing a Paper which, he was sure, would prove very valuable to surveyors in dealing with cases for compensation under the Act.

Mr. G. T. BROWN (Fellow), in seconding the vote of thanks, said he felt sure that all present would join him in heartily thanking the authors of the Paper, which would form an interesting and valuable addition to the *Transactions*.

The Act must, he thought, be regarded from three points of view. First, from that of the railway companies themselves, secondly from that of the owner and occupier, and thirdly from the point of view of the insurance companies.

It seemed to him that owners and occupiers had been placed by the Act in a considerably better position than before. Speaking from his own somewhat limited experience, he might say that although in the case of several small fires there had been no difficulty in getting the railway company to give reasonable compensation, in one case of a very considerable claim the company successfully put forward the plea that they had used the best known appliances, and so were exempt from liability. It was not easy to understand the real motive of the

legislature in passing this Act, but he thought its inception might possibly be due to the growth of other modes of locomotion, such as electric motors or other engines from which no sparks were emitted.

The owner's and occupier's view of the Act had been fully dealt with by Mr. Hall, and he would not therefore go further into that aspect of the case, but would consider it as it affected the insurance companies. He had put the question to one of the best offices, and he found that the ordinary farm stock policy did not impose on the company any liability at all for growing crops. There was also a provision in the policies that all crops should be stacked at least 100 yards from a railway.

But an important change in the law had taken place, it being provided by Section 4 of the Act that "The expression 'railway' includes any light railway, "and any tramway worked by steam power." Thus it seemed that anyone working a siding for the use of collieries or factories would be liable under the Act.

As private owners would have in future to cover this risk, he had thought it well to ascertain what the insurance companies proposed to do. The company to whose office he went informed him that they were now considering the question. No scale of rates had yet been completed, but they hoped shortly to let him know the terms decided on.

He was sure he expressed the feeling of the Meeting in seconding the vote, and he wished to add to the general thanks his own tribute of appreciation.

Mr. AUBREY J. SPENCER, Barrister-at-Law (Visitor), said that what seemed to him to be a very important question, which had been dealt with by Mr. Hall to some extent, was whether a landowner, part of whose land

had been taken, and who had been paid compensation for that land and under Section 63 of the Lands Clauses Compensation Act, for injury to the rest of his land severed, would in case of fire be able to claim damage under the present Act. He thought the case mentioned by the authors of the Paper, of the Stockport Railway Company, was a very important one indeed. That case showed that a claim for possible danger of damage by fire might be taken into account in assessing compensation when land was taken by a railway company from a private owner. That case had been approved of by a subsequent case taken to the House of Lords, namely, *Cowper Essex v. The Acton Local Board*,* which might be considered as laying down the undoubted law on the point.

Another case which bore on the question was *Croft v. London and North Western Railway Company*, reported in 3 Best & Smith, p. 436, which laid down that when part of an owner's land was taken and he was receiving compensation for land retained by him, it was, or ought to be, assessed on the basis of covering all damage that might accrue to him in future from any reasonable user by the railway company within its statutory powers. In that case the railway was authorised to be constructed in a tunnel, and the owner of the land claimed and received compensation for the right to construct this tunnel, for the purchase of the site thereof, and for injury to his land adjoining.

Owing to vibration from passing trains serious injury was afterwards caused to the land owing to subsidence, but it was held that the owner was not entitled to compensation on the ground that compensation when

* *Professional Notes*, I. 201-223 ; III. 310-341.

assessed was assessed once for all when the land was taken, and there could be no further claim for compensation. The effect of the decision in this case, stated shortly, was that any claim made by the landowner must include any future damage which must be assessed at the time the land was taken under the Lands Clauses Act, and could not afterwards be brought forward. That had been approved in the case of *Mercer v. The Liverpool and St. Helen's Railway*.* The damage was presumed to have been foreseen and taken into account at the time the land was originally taken, and no claim could afterwards be made in respect of such damage. That only applied, of course, to the exercise by the railway of its statutory and authorised powers.

It would be observed that the Act did not say that the emission of sparks should not be considered as part of the authorised carrying on of a railway in future, but the fact that an engine was used under statutory powers should not affect the liability of the company for damage by fire.

It might therefore, he supposed, be taken that provided the best appliances were used the emission of sparks was still in pursuance of the statutory powers of the railway, and it seemed to him that so far as the damage was caused by the exercise of statutory powers of the railway, it was a matter on which a claim might be made at the time when compensation was originally assessed, and consequently not again by the landowner, whose land had been taken.

That involved a rather serious question, which would probably come before the Courts before long.

The landowner would still be able to claim, if he

* *Professional Notes*, XI. 70 ; XII. 66.

could show negligence on the part of the railway company, as in *Smith v. the London and South Western Railway*, referred to in the Paper, where heaps of dried grass and trimmings were left adjoining the railway ; but that was a claim outside the scope of this Act.

It appeared to him that the reason why such defence had not been set up before was that heretofore negligence must have been proved. It was, before the passing of this Act, not enough to say as against the railway company that a man who used a dangerous thing was liable for the consequences, but it must be shown that there was some negligence in using it. Possible negligence in the exercise of statutory powers could not of course be a subject for compensation when the land was first taken, but there was little doubt that railway companies would set up this defence to claims under the new Act, which made it unnecessary to prove negligence.

Of course that did not apply to a case where compensation had been paid under Section 68 of the Lands Clauses Act, because that section had been held to be confined to damage caused in the execution of works. Under Section 63 it seemed clear that the compensation given was not confined to damage caused in the original execution of the works, but included future injury by working the railway. Section 68, which enabled a person to claim whose land was injuriously affected, though none of it was taken, had been held on the other hand to be confined to damage caused by the execution of the works.

Mr. H. COLLEY BRIERLEY, in reply, desired first to express his great indebtedness to the Meeting for the very kind way in which they had received the Paper. Mr. Clay and he considered themselves well rewarded for the trouble involved in its preparation by finding it so

well appreciated, though they felt that they had been unable to give more than a very inadequate statement of the law on the subject.

The chief point referred to in the discussion was the authors' argument that compensation for the additional danger of fire had already been paid for by the railway companies at the time of the original acquisition of the land. Mr. Hall's remarks were exceedingly useful from the point of view of the landowners, but after Mr. Aubrey Spencer had so ably strengthened the case for the railway companies he thought he could add little of value in reply to Mr. Hall.

He should, however, like to draw special attention to the rule in assessing compensation, under the 63rd section of the Lands Clauses Act, for injuriously affecting other lands of an owner, part of whose lands had been taken by the company. The compensation should take into account all damage which could reasonably be foreseen. As Mr. Spencer had pointed out, an owner could not subsequently claim compensation if any such damage were omitted in the original assessment.

From the case of *re Stockport, &c., Railway Company*, quoted in the Paper, it would seem that damage by fire was damage which could reasonably be foreseen; and if damage to buildings and other property could be apprehended, he thought it followed that damage to growing crops could also be apprehended.

The well-known fact that growing crops, dead stock, buildings, &c., within a distance of, usually, 100 yards from a railway, were not subject to the benefits of insurance policies without extra premium, would also appear to show that damage by fire to adjoining lands was damage which could reasonably be foreseen.

He agreed with Mr. Brown that the ordinary farming

stock insurance policy did not usually cover growing crops; but from a proposal form he had examined he found that such crops could be covered by placing a separate and distinct amount thereon, and he believed the premium was the same for growing crops as for other agricultural produce when this was done.

He thought it well to add, however, that the authors did not wish it to be inferred that they contended that the payment by the companies of compensation for injuriously affecting other lands of owners, parts of whose lands had been taken by the companies, would give the companies the right to set fire indiscriminately to such other lands; but it would seem the payment of such compensation would merely have the effect, as had the case of *Vaughan v. Taff Vale Railway Company* previous to the coming into force of the Act under discussion, of protecting the companies where there was no negligence.

Owners, part of whose lands had not been taken by the companies, had not been compensated under Section 68 of the Lands Clauses Act for damage subsequently accruing to their lands, and would now be able to claim for any damage by fire within the Railway Fires Act.

As regards the case of *Jones v. Festiniog Railway Company*, although the point had not been referred to in the discussion, he should like to mention, for the benefit of those not well versed in railway law, that in most special Acts previous to the Railways Clauses Act, 1845, would be found, he thought, a section similar to Section 86 of the Railways Clauses Act, giving the railway company power to use and employ locomotive engines or other moving power. So that under such special Acts the case of *Jones v. Festiniog Railway Company* would not apply. It would be remembered

that in the early case of *Rex v. Pease*, referred to in the Paper, the special Act authorised the company to use and employ locomotive engines on their railway.

In conclusion, on behalf of his colleague and himself, he would reiterate his thanks to the Members present for their very courteous appreciation of the Paper.

The PRESIDENT, in summing up the discussion, said that after the remarks by Mr. Hall and Mr. Brown, from the surveyor's point of view, and of Mr. Aubrey Spencer on the legal aspect of the matter, he could hardly think that any observations of his own would throw much further light on the subject.

He had been concerned in many cases of settlement with companies, but he could not say that he had ever known the compensation on purchase regarded as being paid for such prospective injurious affection in any claim against any of the railway companies in the north of England. He had also been called upon to assess and settle damages by fire from sparks and had always been met in a very equitable manner, and if there had been negligence, or even probable negligence, the railway company as a rule would recognise that the damage done ought to be paid for.

He had no doubt that in the Lands Clauses Act, if it were read literally, the expression "injuriously affecting" covered all damage that might occur conceivably or even possibly in the future, to any lands that might be affected by the construction of a line, but he thought there was involved a question of equity far higher than the mere fact that no such contingency had entered into the minds of any of the parties negotiating a claim.

He did not know one surveyor who in settling compensation had ever considered that injuriously affecting

applied to the possible firing of farmers' crops or damage to a wood. It had, he admitted, been considered in many cases similar to the *Stockport Mill* case, where the properties were adjacent to a railway, but on purely agricultural land he had never known a case where in the mind of either party the mere fact that fire might take place at some indefinite time had entered into consideration.

For that reason he had said that far beyond the purely legal aspect of the case was the equitable one. It was the question what was just and right as between two antagonistic parties. He believed the present Act to be an endeavour to bring equity into any claim that might be made. In the many hundred cases in which he had been concerned, either in settlement, or in arbitration, or in making an Award as umpire or sole arbitrator, he had never once considered the future possible damage by fire to land adjoining a railway line, and no doubt what applied to his practice also applied to that of others.

He thought the real object of the Act was to ensure that any future damage which could not be assessed at the time of purchase, as it was too remote and outside the ordinary practice of the politics of life, should be paid for. Such remote damage could not be foretold, but could only be assumed hypothetically. It was, undoubtedly, to meet cases of that kind that the Act had been framed.

The vote of thanks having been put and carried unanimously the Meeting then adjourned.

THE SMALL HOLDINGS AND ALLOTMENTS ACT, 1907.

By W. G. S. ROLLESTON (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION on Monday, February 24th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

Before proceeding to consider this Act, it will, I think, be desirable to glance very briefly at the principal measures which previously dealt with small holdings and allotments, for in accordance with the modern custom the Act of 1907 contains a good deal of legislation by reference, and many of the provisions of previous Acts are dovetailed into the present one.

The first measure we need consider is the Allotments Act of 1887, which gave to any six electors or rate-payers in a district the right to petition the Sanitary Authority to obtain allotments for the labouring population, and to that authority the power to hire or purchase land for the purpose by agreement, subject to the proviso that it should only be at such a price or rent that all

expenses of acquisition and adaptation might reasonably be expected to be recouped.

Should the Sanitary Authority fail to acquire land on suitable terms, it might petition the County Authority to authorise its compulsory purchase by Provisional Order.

The Sanitary Authority was also empowered to adapt land for allotments and to borrow money for that purpose and for its acquisition, and also to make any regulations requisite and to provide for its management. The size of allotments was limited to one acre, and only certain buildings of a temporary character might be erected thereon by the occupiers. The Act also contains provisions enabling the Sanitary Authority to acquire land for common pasture on similar conditions.

Procedure under this Act proved to be somewhat cumbrous and expensive, and advantage was not largely taken of it, but it doubtless helped to increase the provision of allotments by private enterprise where a demand existed.

To afford a remedy in cases where, after petition, the Sanitary Authority had failed to provide allotments, an amending Act was passed in 1890 giving the right of appeal to the County Councils, which had recently come into being, and authorising the latter to assume the powers and duties of the former Act and carry out its provisions in place of the defaulting authority.

This Act also was not extensively made use of, but it probably helped further to quicken the private provision of allotments already referred to. Many, however, have since been given up, and not infrequently several have passed into the hands of one individual owing to the difficulty of reletting.

The Small Holdings Act of 1892 is better known,

and its main provisions are still in force. It empowers County Councils to buy, and under certain circumstances to lease land voluntarily, and to resell and relet for small holdings, the size of the holding in the former case being limited to 50 acres or to an annual value as calculated for the purposes of income tax of £50, and in the latter to 15 acres or to an annual value of £15. Councils may adapt land for selling or letting and may borrow money for the purpose, but only at such a price as will reasonably secure them against loss; nor may the cost involve a charge of more than 1d. in the £ on the county rate in any one year. They may lend four-fifths of the purchase money to tenants purchasing from them or direct from their landlords.

This Act, of which also advantage has not been very widely taken, was successfully put into operation by the Worcestershire County Council.

The Local Government Act of 1894 created Parish and District Councils. The former might acquire land for allotments by agreement, but failing agreement might petition the County Council, which might make an order for compulsory purchase or hire, subject to the sanction of the Local Government Board.

A Parish Council could only borrow for these purposes with the consent of the County Council. The amount borrowed was limited to one-half of the assessable value, and a sum exceeding the product of a rate of 6*d.* in the £ on the rateable value might not be raised in any financial year for these and other purposes.

Sanitary Authorities were merged into District Councils, and their powers and duties with regard to allotments were consequently transferred to the latter bodies.

The restrictions as to the size of allotments were removed, but these were still limited, where the land was

compulsorily acquired, to four acres of arable or three acres of pasture and one of arable. The limitation on buildings was also made less stringent than in the earlier Act.

The recent Act of 1907, the immediate subject of discussion to-night, incorporates the provisions of all the above-mentioned which are not expressly repealed or inconsistent with it.

Its first feature is the appointment by the Board of Agriculture of two or more Commissioners, whose duties are to ascertain the extent to which a demand for small holdings exists, or would exist if suitable land were available, and the extent to which it is practicable, subject to the provisions of the Act of 1892, to satisfy that demand; they must then report to the Board stating if it is desirable that a scheme for the provision of such holdings should be put into operation. The Board after consideration of the report, if concurring that such a scheme is desirable, must notify the County Council concerned to that effect, when it becomes the duty of the Council to submit one or more draft schemes for approval. Should a Council fail to do so within six months, or a further period determined by the Board, the latter may direct the Commissioners to prepare a scheme. The Board may approve, modify, amend, or annul any draft scheme as they think well.

Provision is made for the advertisement of a draft scheme and for the lodging of objections thereto, and the Board may, and shall if it be a scheme prepared by the Commissioners and the County Council object, hold a public local inquiry, at which the Council and such other persons as the person holding the inquiry may in his discretion think fit to allow, shall be permitted to appear and be heard.

The Board have the power thereafter to enforce the scheme either with or without modification, or to annul it. County Councils need not, however, wait for the Commissioners' report, indeed they have been requested by the Board to submit draft schemes on their own initiative.

It will be noticed that, where objection is taken to a draft scheme, the holding of an inquiry by the Board is permissive unless the County Council are the objectors, and that the right to appear and be heard thereat is given to the Council, but is limited in other cases to the discretion of the person holding the inquiry. As this person will be an official of the Board he will doubtless take an equitable view of his powers, and allow all persons directly interested in the lands proposed to be taken or affected by the scheme to appear and be heard; but it would have been more satisfactory if an absolute right to do so had been given to landowners and occupiers, at any rate to those directly affected. An amendment to this effect was proposed by the Council of The Institution in their memorandum of suggested amendments sent to the President of the Board, and an effort was made in Grand Committee to insert such a provision in the Bill, but was defeated.

Under Section 5, when a scheme has been confirmed by the Board, it is the duty of the Council to carry it into effect, either under the provisions of the Act of 1892 or of this Act; should they fail to do so within the time determined by the Board the latter must direct the Commissioners to carry it out, for which purpose exactly similar powers to those of the Council are conferred upon the latter, their expenses in the exercise of such powers being repayable by the Council.

Under Subsection (4) of this section, where it appears

to the Board that the carrying out of a scheme has resulted or is likely to result in a loss, they may with the consent of the Treasury repay the whole or any part of the loss out of the Small Holdings Account, the latter being the contribution of Parliament from public funds for the purposes of the Act. In the exercise of their powers under this subsection and in pursuance of a pledge given during the passage of the Bill through Parliament, the Board have already forwarded to the County Councils a Treasury minute undertaking to repay them the half of any irrecoverable loss incurred when the Department is satisfied that a Council has acted reasonably and taken due precautions; the Chancellor of the Exchequer, however, takes occasion therein indirectly to impress upon Councils the necessity of prudence in their transactions.

Under Section 17 the Board may also repay the Councils, out of the Small Holding Account, the whole or part of the expenses incurred by them in proceedings in relation to the acquisition of land, but this power does not include the repayment of purchase money, compensation, or rent. The Board point out in a recent memorandum to the Councils that the expenses contemplated would include the cost of valuations and surveys of lands to be acquired, of local inquiries, of registration of title and other legal expenses, and official regulations under which such assistance will be given are promised. The cost of management must not be included therein, and a sufficient sum to cover this must be added to the rents or instalments of purchase money receivable by the Councils. Any sum, however, repaid under this section will necessarily not be treated as part of the costs incurred in calculating the net loss sustained.

The repayment of a proportion of the loss mentioned was also, I believe, suggested by our Council, and although the undertaking could doubtless be rescinded by any future Parliament, it would be extremely difficult to do so in face of the presumed opposition of the County Councils, and it may therefore be taken as likely to stand good for, at any rate, a considerable period.

This repayment of loss being coupled with the provisions of Section 18 of the Act of 1892, prohibiting Councils from acquiring land unless in their opinion the expense incurred will be recouped out of the purchase money or rents receivable, which must be fixed at such reasonable amounts as will in their opinion guard them against loss, and they being prohibited from taking proceedings by which the charge on the county rate for the time being is likely to exceed in any one year the produce of a rate of a penny in the pound, it will be seen that the eventual loss which may fall upon the ratepayer will probably not be a heavy one.

In the original Bill the limit of one penny in the pound could be withdrawn at the discretion of the Local Government Board, but the subsection was defeated in Grand Committee.

The Board have also pointed out to the Councils that the subsection mentioned applies only to losses under a scheme in accordance with the Act, and it may therefore be prudent for Councils only to proceed, where there is any risk of loss, under such a scheme—a hint which I think will be strictly acted upon by the majority.

Under Sections 6 and 7 County Councils may purchase voluntarily and re-sell under the Act of 1892, or let for small holdings under that or the present Act. Should they be unable to acquire land voluntarily they

may purchase or hire it compulsorily (the latter for a term of not less than 14 nor more than 35 years), and may adapt it for small holdings, but they may only let land thus acquired.

The power to acquire land for small holdings and allotments includes power to acquire land for grazing and other rights, and also stints and other alienable common rights of grazing to attach thereto.

This then is one of the cardinal features of the Act, that land may be acquired compulsorily, but when thus acquired may be let only, not sold, the ownership therefore remaining vested in the Councils in perpetuity. Consequently no one can purchase his holding under this Act, but can do so only when the land was acquired voluntarily under the Act of 1892, which course, as stated, is still open to the County Council.

Section 9 empowers a Council to let one or more small holdings to persons working on a co-operative system, and, with the consent of the Board, to associations for the purpose of promoting the creation of small holdings, provided that the division of their profits among members is restricted.

Under Section 11, the Council may not allow the erection of more than one dwelling house for occupation with any one holding, but more than one may be erected thereon for occupation with adjacent holdings.

Councils may borrow money for the acquisition and adaptation of land, and Section 14 enlarges the maximum period for repayment of loans, either under the Act of 1892 or this Act, to 80 years, for purchase, or 50 years for adaptation or otherwise. This to my mind is a wise provision with regard to the purchase of land, as the actuarial difference in the amount of the annual instalments for repayment of capital in the longer

period as compared with the shorter one of 50 years provided in the Act of 1892 constitutes a startling reduction in the former, with a consequent lightening of the burden of repayment. On the other hand, the term of 50 years for repayment of loans for buildings is open to criticism, unless they be of the most permanent and durable character; the term, however, is subject to the sanction of the Local Government Board, who probably may not recommend the maximum period, except where due cause is shown.

Except with regard to borrowing and taking land compulsorily, Section 16 gives the Board of Agriculture similar powers to those conferred on County Councils under the Act of 1892 and this Act for providing small holdings on its own account in any locality, with the view of demonstrating the feasibility of their establishment therein. In such cases the expenses of the Board fall upon the small holdings account, *i.e.* the National Exchequer, and are not to be paid by the locality. Whether these powers will be acted upon or not will doubtless depend upon the working of the Act by the County Councils within the next year or two, as I take it the Board will not be desirous of embarking upon such experiments until their need is clearly demonstrated; but there is something to be said for the opinion held by many, that as the provision of small holdings is a national matter, in equity the experiment should be carried out and the cost borne by the State and not by the locality, and that the Act should have been limited to conferring such powers upon the central authority, so that the results of the experiments made could have been clearly observed and ascertained before any coercion of the County Councils was attempted.

Part II. of the Act deals with allotments, by which the powers and duties of the Local Government Board under the Allotments Acts are transferred to the Board of Agriculture, and those of Rural District Councils to Parish Councils, or where there is no Parish Council to persons appointed by the parish meeting.

The extent of an allotment which may be held by one person is raised to five acres, either arable or pasture, which, however, may be increased with the sanction of the County Council, but Councils are not called upon to provide allotments of more than one acre, unless they think it well to do so.

Parish Councils, in addition to the powers of improving and adapting land now transferred to them, may erect buildings and dwelling houses thereon, but only one dwelling house may be provided for occupation with any one allotment, and then only when the allotment is not less than one acre in extent. They may also let land for allotments to co-operative societies or associations which have for their object the promotion of small tenancies, in the same manner as County Councils may let small holdings to such societies.

Parish Councils may hire and purchase compulsorily land for allotments through the instrumentality of the County Councils, who, on representation, are authorised to acquire the requisite land if they think well, as in the case of small holdings. The Parish Council have a right of appeal to the Board should a County Council refuse to act in answer to their request; in which case the Board may make an order for the compulsory acquisition of the land. The duty of ascertaining the extent of the demand for allotments is thrown upon the County Councils, and should they fail to do so or to supply the allotments required, the Board may transfer

their powers to the Commissioners, as in the case of small holdings.

Parish Councils may borrow moneys for the acquisition and adaptation of land, a restriction on the amount of such borrowing apparently being contained in Section 234, Subsection 2, of the Public Health Act, 1875, which is indirectly incorporated with this Act. This section limits the amount of loans to a sum not exceeding the assessable value of the parish for two years. The rate which may be levied in this respect is also presumably regulated by Section 11, Subsection 3, of the Local Government Act, 1894, under which a Parish Council is prohibited from levying for its expenses, other than expenses under certain adoptive Acts, a greater rate in any one year than the product of sixpence in the pound on the rateable value of the parish. I have arrived at this conclusion from a careful study of the Acts in question, but I have been unable to obtain a legal ruling on the point, and I much hope these remarks may lead to a more authoritative expression of opinion thereon during the course of the discussion. I may mention here that the above was written before the recent circular to Parish Councils was issued by the Board ; this confirms the limitation of the rate mentioned, but does not allude to any limitation of the amount which may be borrowed.

It will be seen that largely increased powers with regard to the acquisition of allotments are now given to Parish Councils, and this it is to be hoped may lead in the future to an increased interest on the part of the public in the election of suitable persons to serve on these bodies.

We now come to the sections of the Act dealing with the acquisition of land, which are probably the most

directly important and interesting to Members of this Institution, who will doubtless be largely concerned on behalf of the various parties affected in carrying them into effect.

Section 26, combined with Part I. of the First Schedule, provides that a Council, wishing to purchase or hire compulsorily, may submit an order to the Board for their sanction, putting into force in the case of purchase the provisions of the Lands Clauses Acts relating to compulsory acquisition, and Sections 77 to 85 of the Railway Clauses Consolidation Act, 1845, which relate to minerals; and, in the case of hiring, the provisions of both parts of the First Schedule to this Act. Part I. also provides that the order shall contain such provisions as the Board may prescribe, *inter alia*, for the protection of the Council and the persons interested in the land.

There is, however, one important divergence from the Lands Clauses Acts, namely, that all cases of disputed compensation are to be decided by a single arbitrator appointed by the Board, who shall be deemed to be an arbitrator within the meaning of those Acts.

The order must be published by the Council, and notice given in the locality to the owners, lessees, and occupiers of the lands affected. It must be confirmed by the Board, who have discretionary powers in the matter, before it becomes valid, and objections may be made thereto within a prescribed period by persons interested in the land, which will receive due consideration from the Board. An order may provide for the continuance of existing easements, and must provide, if so required by the owner of the land to be acquired, for the creation of such new easements over the land as are reasonably necessary to secure the continued use by the owner of

means of access, drainage, water supply, and other facilities previously enjoyed over the land acquired.

Section 26 (5) enacts that in cases of disputed compensation no additional allowance may be made for compulsion, thus following the precedent of the Local Government Act of 1894.

Where land compulsorily hired is mortgaged, a lease made by the mortgagor or mortgagee in possession is subject to the terms of Section 18 of the Conveyancing and Law of Property Act, 1881, which define the respective rights of these parties to grant leases, and which are so well known that I think I need not now touch upon them in detail. In the case of mortgaged land thus hired it seems possible that hardship to the owner may arise, as in all probability the mortgagee, although the rent will be absolutely secured during the continuance of the term, will call in the loan, not liking the prospect of his money remaining upon a security which can scarcely command a ready sale should it be necessary to realise. My reasons for thinking this are that, as the Council have the power to renew the lease at their option practically in perpetuity, the owner is debarred from exercising the ordinary rights of ownership and virtually becomes a mere rent charger for an undefined period, while on the other hand, should the land be given up at the end of the lease, he may be left to contest a large claim for compensation for improvements which in his opinion are of doubtful benefit, and possibly a cause of depreciation to his estate. The same argument equally applies in cases where an owner wishes to raise a fresh mortgage upon lands compulsorily hired. Members of this Institution will doubtless be called upon from time to time to advise mortgagees as to the calling in or otherwise of mortgages upon lands com-

pulsorily leased, or as to lending upon their security in the future. For the same reasons it follows that the saleable as distinct from the letting value of land compulsorily hired under the Act will be depreciated.

Subsection 8 of Section 26 gives a Council power, within six weeks after the compensation for land to be acquired (or the rent in cases of compulsory hiring) has been determined, of withdrawing the notice to treat, subject to the payment to the persons interested of any loss or expenses sustained or incurred by them in consequence of the notice to treat and of its withdrawal, in the event of their finding that the land cannot be let at such a price as to secure them from loss. In the case of dispute as to the compensation the matter is to be decided by arbitration. This provision will no doubt enable Councils to get out of a difficulty which may often arise in practice, as would-be tenants will naturally want to know the rent of the land they are to have. This the Council will be unable to tell them until after the determination of the compensation, when the rents will frequently be found more than the applicants will care to pay, many doubtless hoping to obtain the best land in the neighbourhood at the average rental of the larger farms.

Section 27 gives the Council power to renew from time to time its lease of land hired compulsorily, by giving the owner not more than two nor less than one year's notice before the expiration of the tenancy, the rent to be settled in default of agreement by a valuer appointed by the Board. The authority will therefore have power to renew the lease at their option virtually in perpetuity, without any corresponding option on the part of the owner, who also, if he cannot agree as to the rent for the further term, has no voice in the appointment

of the person to settle the question. It would have been more equitable, I think, if in such an event a right of counter notice had been given to the owner requiring the Council to purchase the land. An amendment to this effect was recommended by the Council and proposed in Grand Committee, but was resisted by the Government and consequently defeated.

Section 28, Subsection 3, and Section 29, inserted by arrangement with the Ecclesiastical Commissioners, give special facilities for the sale or letting of glebe lands for the purposes of the Act, and provide that during the continuation of a tenancy thereunder the Ecclesiastical Dilapidations Act of 1871 shall not apply to the buildings upon the land thus leased.

Section 30 exempts parks, gardens, pleasure grounds, home farms, land required for the amenity or convenience of a dwelling house, and woodland not wholly surrounded by or adjacent to land acquired by a Council, from compulsory acquisition. A Council and the Board in making or confirming an order therefor are to have regard to the extent of land held or occupied in the locality by any owner or tenant, and to the convenience of other property belonging to or occupied by the same owner or tenant, and to, as far as practicable, avoid taking an undue or inconvenient quantity of land from any one owner or tenant; also, where part of a holding is taken, they are to have regard to the size and character of the existing agricultural buildings not proposed to be taken, and the quantity and nature of the land available for occupation therewith. No holding which does not exceed 50 acres in extent may be compulsorily taken, nor any part thereof.

Section 33 gives the landowner power to resume possession of land hired compulsorily if required for

building, mining, and other industrial purposes, on giving 12 months' notice to the Council. This is the only case in which for all time an owner can resume possession, should the County Council not desire it.

Section 34 gives labourers displaced by the acquisition of land the right to compensation under certain circumstances. The main object of the Act was to keep the labourer upon the land, but it was ultimately recognised in Grand Committee that in some cases its operation might mean his displacement from his occupation.

Section 35 gives a tenant of a small holding or allotment as against the Council the right to compensation under the market garden clauses of the First Schedule of the Agricultural Holdings Act, 1900, as if it had been agreed in writing that the land should be let as a market garden, unless the improvement be executed contrary to an express stipulation in the agreement. An appeal to the Board against such prohibition is given to the tenant.

Subsection 2 gives a Council, as against a landowner, at the termination of the lease of land hired compulsorily, a right to compensation for improvements mentioned in Part I. or Part II. of the First Schedule of the Agricultural Holdings Act, 1900, which were required for the adaptation or use of the land for small holdings or allotments, as if such improvements were mentioned in Part III. of that Schedule, *i.e.* they are included among those improvements for which the owner's consent is unnecessary.

It is, however, provided that the compensation payable to the Council by the owner shall be such a sum as fairly represents the increase (if any) in the value of the holding to the landlord and his successors in title due to those improvements. This is the saving clause in the

section from the owner's point of view, but I imagine that many disputes may arise in the future as to whether the buildings and other improvements are of any value to the owner. The land, it may be surmised, being no longer required for small holdings, they may conceivably be a cause of depreciation, in which case the owner will presumably be entitled to compensation from the Council, under Subsection (A), Paragraph 2, Part II. of the Schedule referred to hereafter; there is, however, nothing in the Act defining the point more precisely, and a fruitful source of litigation seems to be here provided.

Section 38 provides that Section 41 of the Agricultural Holdings Act, 1883, which allows an owner to resume possession of part of a holding for various purposes, shall have effect as if the provision of small holdings were amongst those purposes.

Section 39 empowers County Councils to promote or assist co-operative societies having for their object the provision of small holdings and allotments, and to make grants to them for the purpose, very similar powers being given to the Board.

Section 46 defines a small holding as an agricultural holding which exceeds one and which does not exceed 50 acres, or if exceeding 50 acres, is at the date of its sale or letting of an annual value for the purposes of income tax not exceeding £50

Paragraph (5) of the First Schedule lays down that in cases of compulsory purchase the arbitrator shall, as far as possible in assessing compensation, act on his own knowledge and experience, but shall hear, by themselves or their agents, the parties authorised to appear, and shall hear witnesses, but shall not, except with the sanction of the Board, hear counsel or expert witnesses.

This proviso apparently limits the parties to one expert witness, as it may, I think, safely be assumed that it is open to them to appoint whom they like as their agent in the matter, and this in the majority of cases would doubtless be what is known as an expert witness; it is to be hoped, however, that in cases of any importance the Board may see their way to exercise the discretion allowed them to a reasonable and equitable extent.

Paragraph (6) empowers the Board, with the concurrence of the Lord Chancellor, to fix a scale of costs to apply to an arbitration under this schedule, and also empowers the arbitrator to determine the amount of costs and to disallow the costs of any witness he considers to have been called unnecessarily, and any other costs which he considers have been caused or incurred unnecessarily. Until such an official scale is issued it is difficult to say whether the costs of the agents of the parties, which, as I have stated, may include an expert witness, will be allowed as costs of the arbitration. It is, however, to be presumed that in ordinary equity they will be so, and I may here express the hope that the Board will make the point clear and unequivocal when drawing up the scale mentioned.

Paragraph 1 of Part II. of the Schedule, which relates to compulsory hiring, provides that the Board shall make regulations to carry the order into effect and for protecting the Council and the persons interested in the land, and the order shall incorporate such regulations together with such provisions of the Lands Clauses Act and Sections 77 to 85 of the Railway Clauses Consolidation Act as may, *subject to the prescribed adaptations, appear to the Board necessary or expedient for the purpose.* The words in italics were

stated in Grand Committee by the Minister in charge of the Bill to mean that, as the provisions of the Acts mentioned did not contemplate hiring, but only purchase, much of them would not apply to the former case and might be eliminated, while the remainder might require some adaptation to suit them to cases of hiring. It was for this purpose only, and not for making any change in or leaving out any fundamental principles of those Acts which were in any way applicable to hiring, that this discretion was given to the Board.

Paragraph 2 (a) lays down that the order shall provide for the insertion in the lease of covenants by the Council to cultivate the land properly, and to pay the owner at the end of the tenancy, should it not be renewed, for depreciation by reason of the failure of the Council or their tenants to observe such covenants or *of any user of the land by the Council or such person as aforesaid*, and (unless otherwise agreed) to keep the buildings and premises in repair. The words in italics I have referred to previously as one of the only two places in the Act in which it is apparently recognised that an owner is entitled to compensation at the end of the term for any depreciation or loss he may have sustained. I think, however, that the words used here and in Paragraph 7 are wide enough to cover loss under all heads, and the latter paragraph provides that all questions of the amount due for depreciation by the Council at the end of a tenancy are in cases of dispute to be settled by arbitration, which is a better and more satisfactory method for the owner than settlement by a single valuer.

Paragraph 2 (b) forbids the order to authorise the breaking up of pasture unless the Board are satisfied

that it can be done without depreciating the value of the land, or that small holdings cannot otherwise be successfully cultivated. It is to be hoped that the Board may exercise the utmost discretion on to this point, for the breaking up of any appreciable quantity of the good pasture land of this country, which is a national asset, would, I think, be a national calamity.

Paragraph 2 (c) states that the order shall not, except with the consent of the owner, give the Council any right to timber, minerals, gravel, sand, or clay except for the purpose of erecting buildings or adapting lands for small holdings, and then only upon payment for any materials so used.

Paragraph 3 provides that : (a) the rent to be paid by the Council ; (b) *the amount of any compensation payable to any person entitled thereto in respect of the land or any interest therein, or in respect of improvements executed on the land or otherwise ;* and (c) where part only of a holding held for an unexpired term is hired, the rent to be paid for the residue during the remainder of the term shall, in default of agreement, be determined by valuation by a single valuer appointed by the Board ; provided that if the land is already let the sitting tenant may give notice to the Council that any claim by him against the Council, which under the Agricultural Holdings (England) Acts, 1883 to 1906, might be referred to arbitration, shall be so referred, when the matter shall be thus settled and not by valuation under the present Act.

This section is the first place in the Act in which compensation to the sitting tenant is referred to, and in effect it apparently contemplates that his claim will be against the Council, and not against his landlord, for

all compensation for improvements, produce, acts of tillage, &c., in respect of the land which he is giving up, to which in the ordinary way he would be entitled as against his landlord. If this be not the case the Council will presumably be required to repay this sum to the owner as part of the cost of the acquisition of the land. The point was referred to in Grand Committee, but no very clear light was thrown upon it, except that it was assumed that the sitting tenant would not be entitled in respect of land taken from him under this Act to the special compensation for disturbance given him in certain cases by the Act of 1906.

At any rate it is open to the Board, under their powers of making regulations to protect the persons interested in the land, to insert a provision in the order, in the case both of hiring and purchase, that the Council shall either pay the tenant direct or repay the landlord for all compensation to which the former may be entitled as against the latter in respect of the land taken, as well as any incidental expense incurred by either party in connection with the matter, preferably the former course. I must venture also to express the hope that the Board may see its way to make it quite clear when part only of a holding is taken that the outgoing tenant shall be entitled to all equitable and proper compensation in respect of his dispossession at the expense of the authority taking the land, and not of the owner from whom it is compulsorily taken, and also that the owner shall receive adequate compensation for damage by severance.

Paragraph 4 directs that the valuer in fixing the rent to be paid shall take into consideration the rent (if any) at which it has hitherto been let, and the annual

value at which it is assessed for income tax or rating purposes, the loss caused by severance, the terms of the hiring, any reservation of sporting rights, and all other circumstances connected therewith, but shall not make any allowance in respect of any use to which it might be put in respect of which the owner is entitled to resume possession under the Act.

Paragraph 5 directs that as far as possible any compensation to a tenant for depreciation of the value of the residue of his holding when part has been taken shall be made by taking it into account in fixing the rent of such residue for the remainder of the term. This paragraph therefore recognises that a sitting tenant dispossessed may be entitled to compensation for severance.

Paragraph 6 lays down that any person interested in any valuation shall give the valuer all assistance, access to books, accounts, or otherwise, which he requires in connection with the valuation, and such expenses as the valuer certifies to have been properly incurred by any such person in this connection shall be paid by the Council.

As previously mentioned, Paragraph 7 states that on the conclusion of a compulsory term any question as to dilapidations payable by the Council shall be determined by arbitration.

It will thus be seen that in the case of compulsory purchase all questions of disputed compensation between the Council and the individual owner are to be settled by arbitration by a single arbitrator, and in that of compulsory hiring by valuation by a single valuer, both to be appointed by the Board, in which nominations consequently neither party has any voice: that the sitting tenant when entitled to compensation under the Agri-

cultural Holdings Acts may demand arbitration in accordance therewith: that the owner is entitled to arbitration in cases of disputed compensation in consequence of loss or cost incurred by him by reason of the service and withdrawal of a notice to treat under Section 26, Subsection (8): that he is also entitled to arbitration at the end of a compulsory term when he has a claim against the Council for depreciation: that the amended rent to be paid by a Council on the renewal of a lease under Section 27 is to be settled, failing agreement, by valuation by a valuer appointed by the Board: and that in cases where possession of part only of the land leased compulsorily is resumed by an owner under Section 33 for building or other industrial purposes, the rent payable for the remainder is also, failing agreement, to be settled by valuation by a valuer appointed by the Board; while in cases in which the compulsory hiring is by the Commissioners, acting in default of a County Council, any question as to the right of the landlord to resume possession of any part of the land is to be determined by an arbitrator appointed by the Lord Chief Justice.

All questions referred to arbitration under the Act are, unless otherwise expressly stated, to be determined by a single arbitrator in accordance with the Agricultural Holdings Acts 1883 to 1906; but, as above indicated, where an order has been made for the compulsory acquisition of land by the Commissioners acting in default of a County Council, the arbitrator or valuer, as the case may be, shall be appointed by the Lord Chief Justice instead of by the Board.

The remuneration of an arbitrator or valuer under the Act is to be fixed by the Board.

The Act does not state definitely in what manner a dispute between the Council and an owner at the end of a term, as to the compensation payable by the latter for improvements under Section 35, Subsection 2, is to be determined, unless the terms of Paragraph (3) of the second part of the First Schedule are held to govern the point; they appear, however, to refer rather to the commencement of a tenancy than to its close. In the former case undoubtedly the matters in dispute are to be referred to a valuer appointed by the Board, except that as stated the sitting tenant may claim arbitration if entitled thereto under the Agricultural Holdings Acts, a right apparently denied to a landlord in occupation.

It would seem desirable, however, as the right to claim for improvements on the part of Councils is given in accordance with certain provisions of the last-mentioned Acts, and as claims for depreciation due from the Council are referred to arbitration in accordance therewith, that disputes as to claims for compensation for improvements on the part of the Council should also be settled in accordance with those Acts. The point is not in need of immediate elucidation, but still an authoritative ruling by the Board would I think be advantageous. If, moreover, they could see their way to insert their ruling in the orders for compulsory hiring, it would set at rest all question as to the point.

On taking a general survey of the provisions of the Act we find many features which are open to political criticism, such for instance as the overriding of the County Councils—those powerful bodies elected on the widest and most democratic franchise yet known to our Constitution—by Commissioners appointed by the Department in charge of its administration. We can but

regret also the exclusion of all provision for sale by the Councils to those willing and able to purchase their holdings ; for while perhaps not believing as fully in the wonders effected by the magic of ownership as do its most enthusiastic advocates, we must recognise that it is a powerful incentive to the more thrifty and enterprising of our countrymen. Indeed we know that by a little timely help one County Council at least has successfully made use of the Act of 1892, and has substantially increased the number of small occupying owners within its area—in my humble judgment a desirable result from many points of view. The omission of any power to advance moneys to suitable persons for equipment of their holdings must also, I think, help to retard its operation.

Again, the compulsory power given to the authority to renew practically in perpetuity their lease of land taken from an unwilling owner, without any option on his part, thus possibly compelling him to part with the active possession of his land for ever, coupled with the uncertainty whether the lease may be renewed or not at the end of any term, and yet denying him the advantages which attach to a rent charge in perpetuity or to a lease for a prolonged period of years, strikes one as inequitable and open to serious objection. The powers too for dispossessing the sitting tenant, with the somewhat slender safeguards provided for his adequate compensation in this event, might operate very harshly if made use of by a body both unsympathetic and determined to effect the objects of the Act by any means and by any methods.

Whilst on this point I should like to express the earnest hope that it may be the policy of the Board, as far

as it may be in any way possible, to take for the purposes of the Act whole farms when they become vacant in a normal manner, rather than that the sitting tenant should be forcibly deprived of some portion of his occupation and consequently of some portion of his livelihood; he being in all probability a hard-working industrious man, presumably farming his land and paying his rent to the satisfaction of his landlord, bringing into existence a family of able-bodied children reared upon the soil, and successfully engaged upon an industry deserving every encouragement. I feel sure, however, and every indication confirms me in my belief, that this will be the policy of the Department, and that applications involving injustice or hardship to deserving tenants will not receive their sanction.

It can be fairly argued too that the owner's interests are also but slenderly protected, and are liable to substantial injury should the Act not be administered on equitable and reasonable lines, and that, even if it be so, they may be detrimentally affected in some of the directions I have indicated. Many will feel that the provisions for the ascertainment of the rent and compensation to which he may be entitled are unsatisfactory, and that the denial to him of any voice in the appointment of the person who is to assess these matters is harsh and inequitable.

There are numerous other points which lend themselves readily to criticism in detail, but time will not allow me to enumerate them, and we, I think, all recognise that now the Act is the law of the land, questions as to its political expediency and equity are out of place in this Institution. Its success or the reverse must depend chiefly upon the manner of its

administration, and to this end therefore we should devote our efforts and attention.

We can hardly, as practical men, expect that the Act will bring about the transformation in the character of rural England that is looked for by its most enthusiastic advocates, or will bring unfailing happiness and prosperity to all and everyone who may be attracted by it to the occupation of the soil, or that unlimited areas of land are only waiting and hungering for cultivation by the small holder in order that they may blossom as the rose. Nevertheless Members of The Institution will, I am sure, welcome it, if its working should tend in any way to retain the present rural population upon the soil and retard the constant flow of rural labour to our large centres of industry, by offering greater opportunities for advancement in life to the agricultural or other labouring classes. Surveyors will, I am sure, do all that lies in their power to give the Act the fullest and fairest trial, and to ensure that its provisions are carried out on reasonable, equitable, and economic lines, which I believe alone are likely to secure for it any substantial measure of permanent and abiding success.

The ultimate power and the entire responsibility for the administration of the Act are in the hands of the Board of Agriculture; it is they who will spur on the unwilling or recalcitrant Councils, and in the ultimate event in cases of default will administer the Act themselves; it is they who can curb and restrain the overhasty or too arbitrary authority; it is they who can prevent injustice or inequity to individuals or to the general body of ratepayers; it is they who can safeguard the legitimate interests of all classes and persons affected; and it is they who can virtually determine the

policy as well as the entire scope and character of its operations.

That the Board will carry out its great responsibilities and duties and use its extensive powers wisely and well, we can, I am glad to think, have no doubt. The appointment of the two Commissioners, both I am proud to think Members of this Institution, is the most happy augury for the success of the Act, and speaks eloquently of the spirit which will animate its administration.

From the success with which the Board has performed its duties in the past, from the considerable services that it has rendered to agriculture, from the business-like and sound lines on which its work has been carried out hitherto, as well as from the character and ability of its personnel, and from all we know and can gather of its intentions, we may legitimately congratulate ourselves that we have the most satisfactory guarantee that, for the present generation at any rate, this Act will be most ably administered on fair and equitable lines, and on a business-like and economic basis.

That this is so, and that Members of this Institution will doubtless play a large part in carrying out the Act, in some cases acting for the Department and in others for the individuals or local authorities concerned, to a great extent probably helping to shape the policy and guide the procedure, is to my mind of happy omen for the future working of the Act; for it is apparent that their goodwill and hearty co-operation may do much to ensure the desired result.

I have found it impossible, in the time at my disposal, to refer to all the clauses and provisions of this somewhat complex Act, or to examine those I have referred

to except in the briefest manner. But I have selected for mention those which, to the best of my judgment, are of special importance and interest to the surveyor, in the hope that this Paper might at any rate form a basis for discussion and serve the purpose of evoking expressions of opinion and elucidations of the Act from those endowed with riper judgment, more mature experience, and greater competence to do so than I can claim to possess.

Mr. H. HERBERT SMITH (Fellow) said he felt he was giving expression to the wishes of everyone present when he proposed a cordial vote of thanks to Mr. Rolleston for his admirable summary of the Small Holdings and Allotments Acts, combined with so many interpretations and suggestions of the greatest value to all who had to deal with the subject. The criticisms in the Paper were also valuable and good natured.

He entirely agreed that it was not desirable that The Institution should enter into political questions, but that the Members ought rather to turn their attention to the practical working of the Act which was now the law of the land, and see how far they could as surveyors assist in carrying it out practically and equitably.

But still he felt himself at liberty to say one or two words in the nature of criticism on the Act itself.

The Act, he thought, owed its present form to two misconceptions. It seemed to assume, first, that landlords generally were hostile to the formation of small holdings and allotments, and secondly, that very few small holdings and allotments existed in England. With regard to the first point, that certainly had not been his

experience. He was for ten years chairman of the Small Holdings and Allotments Committee of the Wilts County Council under the former Acts, and although his committee could not boast of any very great success in the administration of those Acts, yet he was bound to say that the result of numerous inquiries all over the country was that the landlords were always found willing to facilitate the working of the Acts.

The real difficulty seemed to be that the applicants themselves, when matters came to business, showed no great desire or ability to take up the land. It was impressed rather forcibly on the mind of his committee that where land was suitable for small holdings they already existed in considerable numbers.

That brought him to the second point of his statement. He thought it would be found on inquiry that where land was really adapted to small holdings, there were a great many more than was generally supposed by those who had not gone practically into the question.

In many counties of England it would be found that a very large proportion—he believed he was correct in saying in some instances more than one-half—of the land let was in holdings under 50 acres, and that the remainder of the land was such as was only adapted to large farms, and could not be made to pay as small holdings.

Most of the landowners in his own district had given much attention to small holdings and allotments, and had let a good deal of land for such purposes. He had in mind particularly the estates of two clients of his own, which adjoined one another, one being about 12,000 acres and the other about 2,000 acres, the former comprising a considerable area of woodland and park and

about 2,000 acres on the chalk formation. Yet a short time ago there were upwards of 600 acres of small allotments on those estates, and the area had only been reduced in consequence of the tenants voluntarily giving up some of the land which they found it unprofitable to work.

Most of the farms on these estates varied from 30 to 100 acres, and so might be considered small holdings. Wherever there had been any desire expressed for still smaller holdings the landowners had always been ready and willing to give facilities for such holdings.

Some years ago a farm of about 200 acres on the larger estate was laid out in this manner, but although it was land admirably adapted for small holdings the experiment was not a success. That seemed to show that in the district in which he resided farms of 50 acres to 100 acres best met the requirements of tenants. He could quote other similar instances.

His experience had taught him that nothing could be more untrue than to say that landowners as a whole were hostile to small holdings, and he thought that if that fact had been more generally appreciated many of the provisions of the present Act, which now seemed drastic and in some instances inequitable, might have been avoided. It was always a mistake, he believed, to flog a willing horse, the only result sometimes being to make him jib. He did not, however, wish to dwell too much on that point, for he believed that if the landowners of England were approached in a reasonable spirit they would loyally endeavour to give every facility for carrying out the provisions of the Act, and he had also a profound faith in the equity and justice of the Board of Agriculture.

He could certainly join Mr. Rolleston in expressing appreciation of the fact that the Board had made a good beginning in appointing as Commissioners two practical men, members of The Institution. He believed that they and their colleagues on the Board would fully realise the great powers and responsibilities placed in their hands, and would exercise them for the advantage to the community at large.

He did not wish to comment on the Act in detail, but as one who had some experience in such matters he could not help pointing out the fact that the area in this country where small holdings were likely to succeed was necessarily limited. They could not, he was convinced, answer on the large chalk formations, and he was doubtful if they would succeed on the heavy clays or on the limestone or oolite formations.

He had lately inspected some small holdings established on Crown lands in the neighbourhood of Bromham, Wilts, which so far had been an undoubted success. There was there a large village population probably dating from the time of the old cloth industry. The farm recently rented by the Parish Council from the Crown had been cut up into 150 new holdings, nearly all from half an acre to two acres in extent, the whole being about 200 acres. A few grass fields, probably unsuitable for tillage, were let in plots of 5 to 10 acres. It had apparently been found possible to make such a distribution without any expenditure upon new buildings.

The occupiers of the grazing lots were given a share in the outbuildings of a large farm, built by the Crown at a cost of probably £2,000 including the farmhouse, which together with a portion of the buildings was now

let off for £30 a year. The farm to which the house and buildings were attached appeared to have been unfortunately managed and was in a bad condition. Upon the greater part of the land the conditions were particularly favourable to market gardening, the soil being unusually quick. Two crops were usually taken off the same ground in one season—potatoes followed by turnips or even two crops of potatoes. There were plenty of good roads all over the estate.

The rents charged varied from £2 2s. to about 17s. an acre—a fairly high rent for light land.

The chairman of the Parish Council, who took the greatest personal interest in every detail, explained that although the seasons had been exceptionally favourable since the experiment was instituted, the margin was very small. The Parish Council bore all outgoings, including rates, keeping up fences, doing repairs, and paying expenses of management, and he must honestly say that he was very favourably impressed with the way in which the work was done. The men seemed to be industrious and to take a great interest in their work, but he feared that such a favourable state of things was not to be found everywhere in England. There were not many places where one could get two crops of potatoes in the same year.

Before dealing with the public demand for small holdings of land he much wished that the press—and he was bound to say some prominent speakers also—would be a little more careful to base arguments on actual facts. In some of the papers reference was recently made to the landowner of whom he had spoken as owning 12,000 acres in Wiltshire. It was said that he let his farms at £1 an acre and the small holdings at £6 an acre.

That statement was absolutely without any foundation whatever, except that two acres out of the 12,000 situated in the centre of a country town and used as small gardens, were let at the rate of £6 an acre, which was moderate when the situation was considered. On the rest of the estate the small holdings were let at practically the same rent as the larger farms. Of course the rent was not the same for farms on the chalk formation, but on the land where small holdings were possible farms of 150 acres were let at practically the same rent per acre as those of 30 acres. Such misstatements were not only untrue, but did an infinity of harm when appearing in the press or as the utterances of persons claiming to speak with authority.

He sincerely hoped all applicants for holdings, the County Councils, Parish Councils, landowners, occupiers, and Members of The Institution (who would doubtless play an important part in the administration of the Act) would approach the business in a friendly spirit, and endeavour to carry out the true intentions of the Act.

Personally he had always been in favour of small holdings where they were possible, though he confessed he was disappointed that more had not been done to make the occupier also the owner. Of course he knew that, in nine cases out of ten, the applicants for such holdings only aspired to become tenants at a fair rent, but he thought it a pity there were not more facilities for those who wished to acquire the freehold.

He felt sure that if all the parties concerned worked together harmoniously, and the Board carried out the Act in a reasonable and conciliatory spirit, as no doubt they would, good must ensue, although he feared the

result might fall somewhat short of the hopes and beliefs of the most sanguine advocates of the system.

Mr. J. ALFRED EGGAR (Fellow) said he had great pleasure in seconding the vote of thanks to Mr. Rolleston, whom he must congratulate on his Paper, in which he had evolved something like order from what seemed almost chaos. In the first paragraph of the Paper he alluded to the number of Acts which were dovetailed into the present one, but he should have been glad to hear that there was some hope that the time was at hand when instead of having so many Acts to refer to there would be simply one Act as a guide for surveyors in carrying out their work. That he considered one of the very unfortunate defects of the present Act.

If he might express his personal opinion he would describe the Act, on the whole, as a good one. It had its defects no doubt, but under the Board of Agriculture and the Commissioners (who he was glad to note were both Members of The Institution) he felt certain that it would be fairly and practically administered. He felt sure also that Members of The Institution would always give their hearty support and advice to the Board if called upon to do so, and that he was not too optimistic in looking forward to the time when any defects existing in the Act would be ultimately removed.

A reference was made on pages 234 and 235 of the Paper to the provision that in each case a scheme must be prepared, and this, he thought, was one of the principal and best features of the Act. He happened to know a little of the matter, and he believed that what was actuating the mind of the Board of Agriculture was a hope that in most cases whole farms would be taken.

He was glad to think that this would be the case; for it was chiefly by the large farms being taken when they came into the market, and developed as small holdings, that there was any prospect of the Act working satisfactorily.

At that point he would like to ask Mr. Rolleston one or two questions. First, Could an individual have land in a particular parish, or must his application be included in a scheme? A second question was: Could a tradesman have a small holding?

His reason for asking was that on an estate of which he had the management both questions had arisen. Several tenants on the estate had said that a tradesman in the parish had told them he was going to have this or that field, and if that were so they would give up their farms. The answer, to his own mind, was that he believed it would be found, when an application from a tradesman came before the Commissioners, they would ask whether he was going to farm the land himself, and if he could not give a satisfactory assurance they would not consider him a suitable tenant. He should much like to have Mr. Rolleston's opinion on the point. He thought it was implied that an applicant must farm the land himself; but he had searched the Act in vain to find this definitely set out.

On page 238 of the Paper reference was made to Section 9, dealing with co-operation in connection with allotments, and there, Mr. Rolleston said, the division of profits was restricted. But the Act stated that the division of profits was "prohibited or restricted." He thought the meaning of that was that when farms or allotments were being carried on co-operatively, by the rules of co-operation there should be no division of profits until the shares had been paid up, which

was one of the reasons, he believed, why those words were inserted. He thought it very wise to include the word "prohibited," for there should certainly be no division of profits until the share capital had been paid up.

Section 11 provided that there should not be more than one dwelling-house on any one allotment or small holding. His own view was that when several small holdings were farmed co-operatively, one block of farm buildings would generally be sufficient to accommodate the horses and implements, which plan would greatly diminish the amount of capital required for building operations.

On page 243 the author alluded to mortgaged lands, saying that in some cases very great difficulty would arise. He hoped the Board of Agriculture would avoid using land which was on mortgage if it were possible to find a sufficient quantity free from such incumbrance.

In some cases a very great hardship might occur, and a certain amount of publicity would be given which was not altogether desirable.

Section 26, Subsection 8, provided that the Council might retire after giving notice to treat, which he thought was scarcely fair. He could hardly imagine that any Council, especially after the Board of Agriculture had approved their scheme, would go so far as to give notice to treat until they were absolutely satisfied that the land was suitable and that everything was satisfactory. He thought that might be a great hardship on the owner of the land.

In his opinion the success of the Act would mainly depend on co-operation, and unless there could be in each locality some arrangement for the disposal of produce

the Act would be a failure, but with a practical arrangement of the kind he thought it would be a great success. Farmers were producers, but had not often the tradesman element that was wanted, not only in the case of small holdings, but even with regard to large farms. The means of ready and systematic disposal of produce was what the farming industry of this country most needed. There were plenty of markets waiting to take the small and large farmers' produce, and the success or failure of this Act would depend on their making full use of them.

On page 250 Mr. Rolleston, alluding to the sitting tenant, said it would not be fair that the tenant should be brought into conflict with the landlord in respect of his claim for compensation. He thoroughly endorsed that view, and hoped this would be arranged, or a great hardship to both parties might result.

With regard to the power of renewal, he could hardly agree with the view that this was harsh or unfair. He thought it was one of the good points in the Act. Any land taken for small holdings must be suitable for them, and if it was for the benefit of the country that the farming industry should be supported (and he was glad to find the country was beginning to realise that fact) small holdings must also be considered as part of the scheme.

He was speaking to practical men, who all knew that not every piece of land in the country was suitable for small holdings; where it was ascertained that certain areas of land were suitable from their situation, nearness to good markets, and so on, he saw no objection to those lands being kept in perpetuity for that purpose. The down lands were suitable for sheep and utterly unsuit-

able for small holdings, and it would be a very great hardship on the country if lands specially suitable for a certain purpose should be taken away for other purposes. Land undoubtedly suitable for small holdings ought to be retained for that purpose and preserved from being built upon, and he saw no objection to such a course while there was plenty of land suitable for building and quite unsuitable for agriculture on either a small or a large scale.

He fully agreed with Mr. Rolleston's remarks with regard to the Board of Agriculture and the Commissioners, and he must congratulate him on the very admirable way in which he had expressed views which he felt sure would be endorsed by every Member of The Institution.

Mr. ARTHUR VERNON (Past-President) said he felt quite sure that all present had followed with the utmost interest the Paper and the remarks of the previous speakers upon it. The object of the Meeting was not so much to criticise the Act, which was now the law of the land, as to find out the best mode in which it could be applied to the country, for on that must depend whether it was to confer the great benefit which its promoters expected or to turn out to be a failure.

He now asked to be allowed to move the adjournment of the discussion in order that at the next Meeting there should be ample time to consider the best way to apply the Act and the means which ought to be taken to ensure that proper land was supplied, and only the proper people selected to carry out this national movement.

He felt sure that all Members who had to deal with this new and important project would do their best to render it a thorough success.

The vote of thanks having been put and carried unanimously, Mr. Rolleston briefly thanked the Meeting, and the discussion stood adjourned to Monday, March 9th, 1908.

The Surveyors' Institution

(INCORPORATED BY ROYAL CHARTER.)

The Small Holdings and Allotments Act, 1907.

SOME DOUBT HAVING BEEN EXPRESSED DURING THE DISCUSSION ON MR. ROLLESTON'S PAPER ON THE ABOVE ACT AS TO THE BASIS ON WHICH COMPENSATION SHOULD BE ASSESSED, COUNSEL'S OPINION HAS BEEN TAKEN ON THE CASE AS STATED BELOW.

CASE STATED FOR COUNSEL'S OPINION.

The Council of The Surveyors' Institution desire to be advised as to the effect of the provisions of the above Act with regard to the determination of the compensation to be paid to the persons interested in land purchased, or leased, compulsorily for small holdings or allotments.

The general scheme of the Act, so far as it relates to compulsory acquirement, is apparently based on the Lands Clauses Act; but there are several modifications of the principles of that Act, and the exact effect of some of the provisions bearing on the question does not seem free from ambiguity.

The Council of The Surveyors' Institution accordingly desire to have a legal opinion on the operation of the Act in this respect as a guide to the Members of The Institution in cases with which they may be professionally concerned.

Counsel's attention may be specially called to the following points :—

Any County Council is empowered to compulsorily purchase any quantity of land which they may think desirable either for small holdings (Section 2 (6)) or allotments (Section 22) subject to certain restrictions in the case of parks, gardens, or pleasure grounds and properties of railway or canal companies, &c., &c. (Section 30).

The County Council may submit to the Board of Agriculture, and the Board may confirm an order putting in force the compulsory powers of the Lands Clauses Act for the acquisition (Section 26 (1)) or hire (Section 26 (2)) of the land required. This power is subject to the modifications of the provisions of the Lands Clauses Act contained, as to compulsory purchase in the Act and Part I. of the Schedule, and as to compulsory hiring in the Act and Parts I. and II. of the Schedule.

The principal modifications of the Lands Clauses Act contained in the Act are :

That the usual 10 per cent. allowance for compulsory purchase is not to be made (Section 26 (5)).

That if the County Council consider the compensation awarded to any person interested in the land is such an amount as would probably render their scheme unprofitable, they may withdraw the notice to treat on payment of any loss or expenses sustained by the person interested in consequence of the notice and withdrawal (Section 26 (8)).

That where the County Council has leased land compulsorily they may, by giving notice to the lessor, renew the tenancy compulsorily for a term not exceeding 35 years, and the rent in that case is to be fixed by a valuer appointed by the Board of Agriculture (27 (1)) and certain principles of the basis of valuation are prescribed (Section 27 (2)).

Paragraph (1) of the first part of the First Schedule to the Act provides that the order for compulsory purchase shall contain such provisions as the Board may prescribe "for the purpose of protecting the Council and the "persons interested," and *shall* incorporate "subject to the necessary "adaptations," the Lands Clauses Acts, and Sections 77 to 85 of the Railways Clauses Consolidation Act, 1845, but with the modification that "any question of disputed compensation" shall be determined by a single arbitrator to be appointed by the Board, who shall be an arbitrator within the meaning of the Lands Clauses Acts, and the provisions of those Acts with respect to arbitration are "subject to the provisions of the Schedule" to apply, but the arbitrator has no power, except in such cases as the Board shall direct, to hear expert witnesses (paragraph (5)). It may be observed that Section 43 provides that "all questions which under the Act "are referred to arbitration" are unless otherwise expressly provided to be determined by a single arbitrator in accordance with the Agricultural Holdings Acts, 1883 to 1906.

In the case of compulsory hiring the Order shall incorporate "such "regulations," together with "such provisions" of the Lands Clauses Act, and of Sections 77 to 85 of the Railways Clauses Act as may, "subject to the prescribed adaptations, appear to the Board necessary "or expedient" (Schedule 1, Part II., paragraph (1)), but the valuation is to be made by a single valuer appointed by the Board, and the principles on which he is to value are laid down in paragraphs (4) and (5). An occupying tenant may by notice require that any claim which might be referred to arbitration under the Agricultural Holdings (England) Acts, 1883 to 1906, shall be so referred (Schedule 1, Part II., paragraph (3)).

It will be observed that in the case of an Order for compulsory purchase the Order is to incorporate the Lands Clauses Acts "subject to the "necessary adaptations." The meaning of this expression is not very clear, but it does not appear to alter or minimise the usual rights to, and grounds of, compensation as in ordinary cases of land being acquired under Parliamentary powers. In the case of compulsory hiring, however, there is a difference in the terms employed; the Order in the latter case may incorporate "such regulations" and "such provisions of the Lands "Clauses Act" as the Board may consider "expedient." The question

is how far the Board have power by framing "regulations," or, by omitting all or any of the provisions of the Lands Clauses Act, to, in effect, alter the basis of compensation payable to the parties interested, or the tribunal by which, or the manner in which, it is to be assessed.

By Section 38, landlords are given power to resume possession of land required for the purposes of the Act as if this purpose were included in Section 41 of the Agricultural Holdings (England) Act, 1883. It is not clear whether if this power were exercised the tenant would be able to claim compensation under that Act only, and would have no claim under Section 4 of the Agricultural Holdings Act, 1906, or under the Lands Clauses Act. If the tenant elects to submit claims to arbitration under the Agricultural Holdings Act, 1883, as provided by paragraph (3) of Part II. of the First Schedule, has he another claim, say, for damage by severance of his holding, or injurious affection, and for re-adjustment of rent. (See paragraph (5)). Further, if the right to resume possession of say 20 acres out of a farm of 200 acres is exercised by the Council, and the tenant exercises his right, on a 28 days' notice, to quit the entire holding, on whom does the liability for the tenant right fall, and can the landlord obtain any compensation for having the whole farm thrown on his hands?

It will be observed that paragraph (1) of Part I. of Schedule 1 provides that any question of disputed compensation is to be referred to the single arbitrator. Although the expression "question of disputed compensation" in the Lands Clauses Act, 1845, refers only to the determination of compensation by arbitration or a jury in the cases of owners and lessees, and is not applied to the settlement of compensation due to yearly tenants by two justices, it is presumed that the intention of the Act is to refer to a single arbitrator the compensation to be paid to all parties interested including yearly tenants.

Counsel is requested to advise as to the tribunal open to owners and tenants respectively for the determination of the compensation due to them on the exercise of the various powers conferred by the Act; the basis of assessment of such compensation respectively; and generally on the rights of owners and tenants under the Act in question with regard to the points referred to above.

OPINION.

It is necessary to consider separately the provisions of the Act of 1907 as to the purchase and hiring of lands. As to purchase of lands. The Council must proceed in the manner prescribed by the Lands Clauses Acts subject to certain modifications. Notices must therefore be given to owners, lessees, and occupiers. I do not think that the words in Schedule 1, Part I. (1) "shall incorporate, subject to the necessary "adaptations, the Lands Clauses Acts" give the Board a right to alter or modify the provisions of the Lands Clauses Acts except as provided in the Act, both as to basis of compensation and tribunal, *e.g.* single arbitrator, right to abandon notice, and limit as to hearing counsel and experts, and allowance for compulsory sale. Subject to these points I

think an arbitrator should proceed as if he were acting under the Lands Clauses Act. He must consider not only value of land taken but damage by severance and injurious affection of the land left. Beside this there are provisions for the case where a landlord desires to resume possession of part of a farm for the purpose of selling or letting as small holdings or allotments. By Section 38 he may now do this as if the selling or letting for small holdings were one of the purposes contemplated by Section 41 of the Agricultural Holdings (England), 1883. In that case I think the only claim of the tenant, part of whose holding has been resumed by the landlord, would be under the provisions of the Act of 1883. I am asked certain questions on the basis of the Council resuming possession of part of a holding, but I do not see how this can arise. The resumption is by the landlord, and is in preliminary process between himself and the tenant, and only after he has resumed does the sale or letting to the Council take place in which the tenant then has no concern. If on receiving notice of resumption as to part the tenant gives notice to quit the whole, the liability to settle tenant right falls on the landlord. There was no obligation on him to resume; he might have left it to the Council to exercise their compulsory powers, in which case the Council would have compensated the tenant.

As to hiring lands. The words in Section 1 of Part II. of the Schedule appear to give a wider discretion to the Board than the corresponding words in Part I., but I do not think that is really so. All that is meant is that in dealing with a hiring of land many provisions of the Lands Clauses Acts which relate to purchase are not applicable—but subject to express modifications in Part II., I think both as to basis and procedure the Lands Clauses Acts apply—and the Board could not by regulations exclude the provisions of Acts which are expressly incorporated. Under this part of the Act the arbitrator has to fix (a) the rent of the land taken, (b) the damage to the rest of the farm in depreciated rental, (c) the rental payable by the tenant in cases where part only of his holding is hired compulsorily, subject, however, to the right of the tenant to carry his claim against the Council to arbitration under the Agricultural Holdings Act, 1883.

I think that all claims including yearly tenants will under this Act go to a single arbitrator.

GEORGE M. FREEMAN.

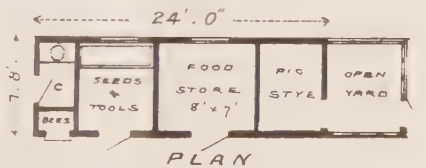
April 20th, 1908.

A.

(EXCEEDING) **5 ACRES**
AND 7 POLES.



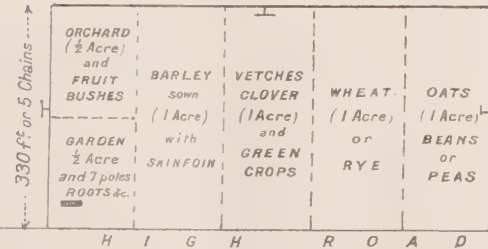
ELEVATION.



PLAN

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666 feet or 10 Chains 9 Links



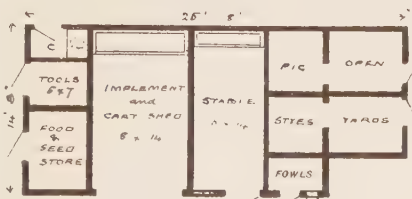
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B.

10 ACRES



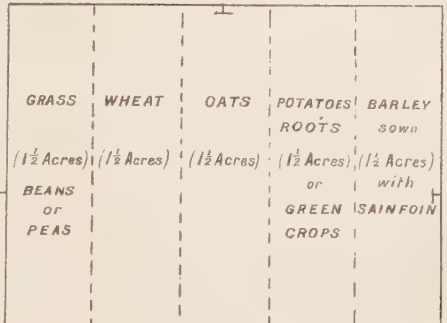
ELEVATION.



PLAN.

FEET 5 10 15 FEET

660 feet or 10 Chains



396 feet
MEADOW
1 1/2 Acres
Permanent PASTURE

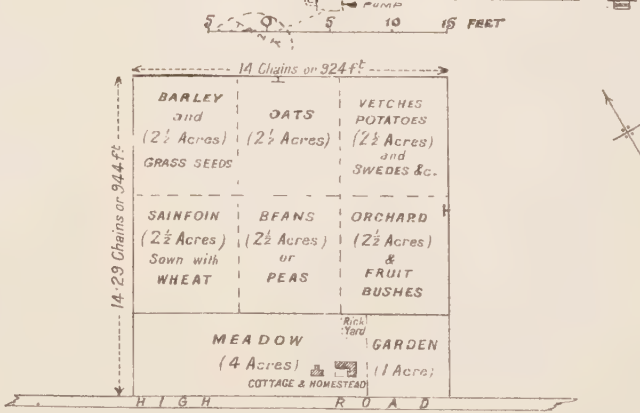
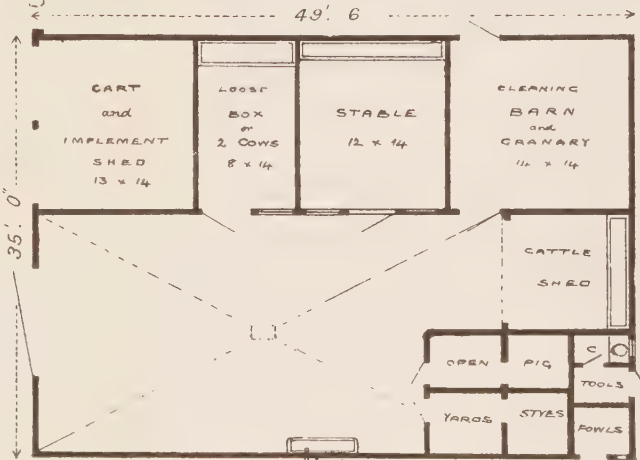
264 feet
HOMESTEAD
ORCHARD
(1 Acre)
and GARDEN

H I G H R O A D

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C.

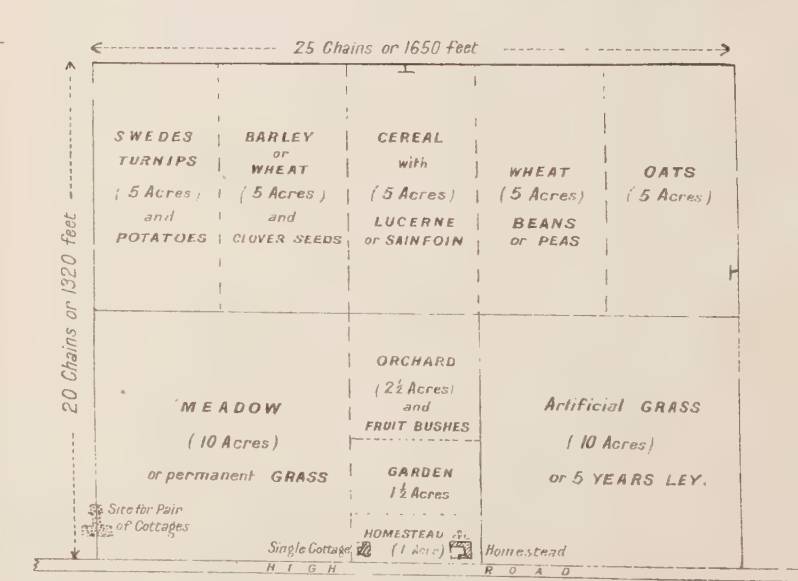
20 ACRES



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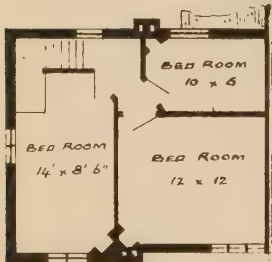
D.

50 ACRES



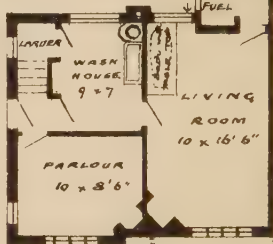
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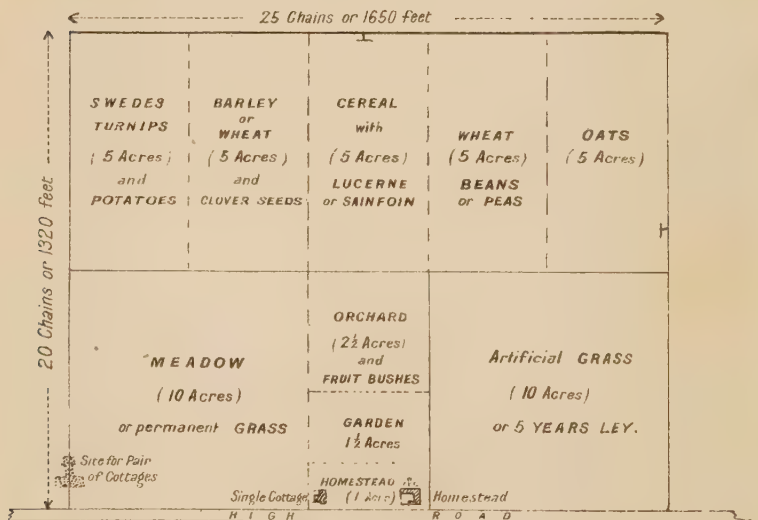


FIRST FLOOR

Sketch Plan
for pair of
COTTAGES
to cost
£430 per pair,
or with
DAIRY and SHED
£480 per pair



GROUND FLOOR



Scale = 100 200 4 8 12 CHAINS

AT

THE ORDINARY GENERAL MEETING,

Held on Monday, March 9th, 1908.

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

The discussion on the Paper read at the Ordinary General Meeting of Monday, February 14th, 1908, by Mr. W. G. S. Rolleston, on "The Small Holdings and "Allotments Act, 1907," was resumed by

Mr. A. VERNON* (Past-President), who said that Mr. Rolleston's Paper, read at the last Meeting before a very large audience, which included the Minister for Agriculture and many distinguished Members and visitors, supplied an admirable review of the existing legislation relating to the various Allotment and Small Holdings Acts from 1887 down to the important Act of last Session, which came into force with the present year. The new Act consisted largely of legislation by reference to other Statutes, and this was particularly inconvenient to laymen who would be called upon to administer its provisions. It was therefore good news to the community that a Bill for consolidation of the Statutes relating to the subject had already been introduced to Parliament, and it was to be hoped would have an easy and unopposed career during the Session.

* For Appendix illustrating Mr. Vernon's remarks see page 310.

For good or ill, for success or failure, the new Act was now in existence. It was the most ambitious attempt of modern times to provide small holdings. No other measure dealing with the subject could be said to have met the expectations of its promoters, or to have achieved more than scanty success. The fear of failure seemed to have animated many clauses of the 1907 Act, and the compulsory powers given to County Councils were a striking feature of its provisions. But the country generally found that County Councils exercised temperately and prudently the powers given to them, and no apprehension was felt that in matters relating to small holdings, on which they had special knowledge and experience, any injustice on the one hand or want of enterprise on the other, was likely to operate against the fair administration of the Act at their hands. It was, however, doubtful if the country was prepared for, or was even now contented with, the supercession (or as Mr. Rolleston called it the overriding) of the County Councils by Commissioners appointed by the Department in charge of the administration of the Act. This might produce most undesirable friction and annoyance ; it was opposed to the modern trend of legislation, which was to trust the representatives of the people. It might moreover lessen the sense of responsibility which was one of the best securities for the good working of County Councils. And if the new powers were exercised arbitrarily or unsatisfactorily, there was little doubt that a County Council so flouted or overridden would bitterly resent the interference.

At present, however, it must be taken for granted that County Councils, both in the interest of their constituents and with a loyal desire to apply the Act fully and well, would only in rare instances need departmental

revision and overruling. And further, as Mr. Rolleston and other Members who spoke at the last Meeting agreed, all must feel great satisfaction in the choice of the two Commissioners already appointed; indeed it was rather in the possibilities of the future, than in any apprehensions as to present difficulties, that one could regard these special compulsory powers with anxiety, alloyed with regret.

Many other points of criticism and suggestion were admirably treated in Mr. Rolleston's Paper, but as the Act was now in force he proposed to address himself rather to considerations as to its probable working.

All the County Councils were now busy arranging for the practical carrying out of the Act. Subject to its provisions there were three primary stages:

1. Obtaining and revising lists of applicants;
2. Securing sufficient and suitable land; and
3. Making prudent financial arrangements.

1. As to applicants. There had been on the whole great and adequate publicity in reaching the classes for whom the Act was primarily intended. Already in most counties a formidable list was available. It had been stated that up to the present there were more than ten thousand applicants for small holdings. Some misapprehensions existed which would occasion disappointment. It was currently reported in many districts that the County Council or the Government would find all necessary capital for the equipment and working of the land, and the lists would automatically shrink as the actual conditions were appreciated and understood.

Having secured the lists, applicants would probably be interviewed by deputed sub-committees of the County Council in each district. Many inquiries would be necessary—which must be treated as of a private

character—including particulars of previous experience with land, means and references, whether desirous of leasing or buying, and other questions which, while full and complete, must not be too inquisitorial or annoying to applicants.

But in every aspect and interest only those who could offer some guarantees by previous experience and fitness and prospects must be accepted. Otherwise the disappointments and disasters would—as every land agent knew—be most serious. The best guarantee for a large area would doubtless be the successful cultivation of a small one.

Many applicants would need advice and guidance as to the quantity of land which they could prudently undertake and profitably cultivate.

In allotments it had been found that 20 poles represents all that one man—in full general employment—could properly manage, and many would not undertake more than 10 poles. An area of one acre had again and again proved a delusion and a snare, and soon lapsed, through the inability of the ordinary tenant to cultivate so much land as a garden, into a badly laid down piece of grass or waste. Unless for a florist, greengrocer, or fruiterer, it did not appear, from an analysis of many hundreds of holdings, that any considerable number of tenants were able or willing to work a single acre of arable land. It was too large for the spade and too small for the plough. Any area of good meadow land might be managed profitably, especially with standard fruit trees and some small buildings. But as the area was increased from one acre to five acres, so the proportion of successful occupiers seemed to increase, and he found a considerable number who have held plots of that size, for 10, 15, and 20 years among the light lands of Bucks.

Given good or even decent land, steady men, with garden or agricultural knowledge, might thrive on any area between five and 50 acres according to their available time, energy, and means. But every one of such men must be an exceptional man, well adapted for small farming, as full of energy and industry as a flourishing colonist, quick to take advantage of markets, economical in everything, and above all fairly provided with means at starting.

It was not easy to decide what was the minimum area of land from which a family could obtain a living. It depended on soil, climate, use and markets. In Jersey and Guernsey one acre with glass, vineries and early produce might suffice. In the Scilly Isles very small walled patches of land produced a wealth in flowers. But on open land and the ordinary produce from any arable area of less than 20 acres, he believed no small family could gain as much as they would by constant hired farm service. If so, it followed that for any area less than the last-mentioned an applicant for a small holding should have additional means for a subsistence, or his occupation would be short and unfortunate.

As to the suitable equipment and cost of working various areas of 5, 10, 20, and 50 acres, he had worked out some suggested plans for the cropping of the land and for desirable farm buildings for each area, with calculations which were annexed and which he hoped would explain themselves.* He assumed in each case that the holding was established on arable soil of medium character, and fairly placed for aspect and access. The result would probably appear discouraging and the estimates of cost too high, but every figure was, he thought, derived from actual experiences,

* See pp. 310-324.

The capital for working good meadow land would involve not only the cost of suitable buildings, and means of stocking and cultivating, but also some provisions for subsistence till profits were realised.

Cottages on the land were desirable with any area of 20 acres or over, and, he thought, essential with a holding of 50 acres or one approaching thereto.

The rotation of croppings suggested was only to indicate generally how the four or five course system could be adapted to the holding, and this would doubtless be varied to suit the crops most saleable, or on which the tenant might most successfully exercise his skill.

2. The securing of sufficient and suitable land for the selected list of applicants was a complicated matter upon which one could give little criticism or advice. It was easy to point out what should be avoided, and how good sitting tenants should be as little disturbed or injured as possible. But as a guide to distance from the applicants' homes, one might suggest that up to, say, about 10 acres, one and a half miles would not be too far, and up to 20 acres about one mile—closer if possible; but it was not so very long ago infants were expected to go to any school within three miles of their home. In larger areas than 20 acres, as before mentioned, cottages on the land and the whole time of the tenant seemed essential to a prospect of success. It must also be constantly borne in mind that land so close to populous areas as likely to be absorbed within a few years for building purposes must for many reasons be avoided in locating small holdings.

And what soils should be chosen? Meadow land of good quality—especially if well fenced, watered, and with easy road access—would do anywhere. But while three-fourths of the applicants wanted old dry turf of this

character, it would be most difficult in many counties to supply a tithe of those demands; and the alternative of requiring the applicants to prepare the land and lay down arable to pasture would in most cases be inevitable. He assumed in his specimen plans that this would be admitted or found to be absolutely necessary.

Starting with arable soil then what conditions were desirable or essential? Very light lands could not produce sufficient crops. Sandy, stony, and rocky land would result in failure, while heavy tenacious clays were quite unsuitable. Lands too dry or too wet would be inadmissible for small tenants. Thin surface soils on deep chalk beds would be of little value for market gardens. Thus the area of selection became much limited, and it would be little short of mockery to induce a thrifty peasant or a small cultivator of any kind to put his labour and scanty capital into a hungry unremunerative soil. The land to be sought should be, best of all, the deep alluvial soil of river valleys, a deep friable loam for vegetable culture, a heavy loam adapted to fruit trees, or any good land of sufficient depth and character to justify the extra labour and cost essential to the yield of large and varied crops from small areas.

3. As to prudent financial arrangements, the most serious difficulties and problems would arise; but this was too large a subject for adequate treatment now. The Small Holdings Account and contribution from Parliament from the public funds would help, but the management expenses in some counties would be serious, and if the rents required became, by the addition of these costs, too high, the extent of small holdings under the Act, whether by way of rents or purchase money, would be quickly curtailed. Co-operative help was

depended on by many and credit banks might be useful. An ideal group of small holdings could be arranged on a productive farm, with a considerable area of meadow land to be used in common and with co-operative arrangements for the disposal of dairy, farm, horticultural, and other produce. But while this system (as the Co-operative Small Holdings Society had shown) reduced cost and promoted success, it involved the concurrence of a number of favourable conditions, some of which were difficult to secure. Indiscriminate subsidising would court general disaster. Some capital, however small; some experience; some proof of reliability and adaptation to the work; the provision of the right land and the prudent area, could alone offer prospects of success to the applicant, and reasonable financial guarantees to the County Council or others who administered the Act. But given all these favourable conditions, nothing but good could result from the planting of some thousands of our fellows—now comparatively landless—among the too scantily occupied tracts of the country sides.

As the Parish Council could deal with allotments up to 5 acre plots, probably the County Councils would deal under the Act chiefly with the areas from 5 to 50 acres. He believed they would loyally, intelligently, and earnestly endeavour to make it a success, so far as might be possible.

The landlords of England would, to judge from their generous treatment of tenants in the past, be no whit behind the popularly elected County Councils in affording all facilities in their power, short of injustice or injury to sitting tenants; and the Members of The Surveyors' Institution (who he believed had the administration of about three-fourths the landed estates of

England as land agents) had already expressed an earnest desire to see the Act administered as a great practical boon for all who were desirous and fit to become tenants of small holdings.

Over the cottage door of one Johann Schmid (Canton Argoire) was said to be written in large letters, "Here lives the happiest man on earth." Schmid, who at 55 years of age said: "I defy you to find a happier man. I have never worked, never married, never been ill, never anxious for the future. I eat well, drink well, and sleep well." His father left him a cottage, a small piece of land, and about £1 a week. Apart from the marriage question, the condition seemed to be to-day the ambition of millions.

But our legislators—and especially might he say our honorary Member, Lord Carrington, the Minister for Agriculture — wanted to stimulate the country to a higher ambition and a nobler claim, that by honest toil our able and willing fellow subjects might wring from the soil, in the one industry that never died, all the advantages of marriage, health, and competence which they believed were offered by the Small Holdings and Allotments Act of 1907.

Mr. E. A. RAWLENCE (Fellow) said he thought all would agree that the Act under discussion was one of the most complicated that had been framed for many years. It embodied some eight or ten other Acts, and he thought it would be by no means easy to say at once what was the position in any given case. A learned King's Counsel had recently been down into Somerset to explain the Act to the labourers there, and he had described it as a "legal mosaic"; he did not give much information as to how the Act was to be construed, but

he led the labourers to understand that they could get what they liked, where they liked, when they liked, and how they liked.

The construction of the Act was a very difficult matter indeed, and he felt sure that it would be on points of construction that the difficulties would arise. He was certain, however, that surveyors would help forward the working of the Act in every way; it had become law, and it was their duty to carry it out.

But when the working of the Act came to be practically dealt with, he thought the cost of carrying it out would stand very much in the way of those applying for land. His experience was that there were plenty of applications for land, but when a labourer or a man of that class found he had to pay something to enter upon the land he was not so much in evidence. Such men were willing to enter free and crop the land as long as they were allowed to do it and as long as they could get a new coin for an old one, but they were not prepared to pay anything: in fact the majority had not the money to pay.

So far as he could see, the entry would be rather a serious matter. If, as he gathered, the powers of the Lands Clauses Act applied, except as to the additional percentage for compulsory taking, there might be, in addition to the tenant right which had to be paid, one or two years' profit to pay to the disturbed tenant, and there would certainly be the tenant's disturbance claim under the new Act of 1907. If any claim for disturbance were recognised, the case in question was certainly one in which it should be, and, if so, there would be under these heads a sum equivalent to two or three years' rent for the tenant to pay down in order to get in.

Then on the landlord's side. Not only was a fair

rent to be paid, but it was clearly recognised that an amount must be added for severance and other damage to the holding. Supposing, for instance, that 20 acres were taken from a holding and that damage to the extent of £10 to the holding could be proved, that added at once 10s. to the rent for the 20 acres taken, for if the original rent were reduced £10 in respect of such damage, clearly the landlord must get that back somehow, and he did not know how it was to be done except by adding it to the rent of the land taken. When the working of the Act came to be looked at in that way, he believed that a great many of the applications put forward would die a natural death.

He knew that by Section 5 of Part II. of the First Schedule it was laid down that this compensation was “as far as possible to be provided for by taking such compensation into account in fixing the rent to be paid for the residue of the holding.”

That brought him to a point suggested by Mr. Eggar at the last meeting. He agreed that it was very important that whole farms and whole estates should be dealt with as far as possible, for it was better to disturb one tenant than to cause injury and damage to half a dozen by taking a piece here and a piece there. He was quite sure that the only way in which the Act could work smoothly was by dealing with whole farms. It would then remain with the Commissioners to deal with the tail end of the farm. It was easy to get applications for the best part of a farm, but land agents would want to know, when meeting such demands, what was to be done with the tail end. That applied specially in chalk areas with, say, 5 or 10 per cent. of water meadow and 5 or 10 per cent. of dry meadow, and a huge percentage of down pasture and arable running right away on to the

hills. If it was proposed to take all the better parts what was going to happen to the rest? It would be thrown altogether out of cultivation. The keeping of large flocks would be impossible if the meadows and the good land in the valleys were taken, and that must surely be a national calamity. It was impossible to apply a rule of thumb to all places in England. In many places small holdings were flourishing, but it would be an error to apply the same system to all districts.

Another point raised by Mr. Eggar was, would small tradesmen be entitled to the benefits of the Act? He sincerely hoped that they would, as these were just the men to whom a bit of land was a boon. They were obliged to keep a horse, and they could thus utilise its spare time in cultivating the land, and at the same time grow straw and fodder for it. On this point he would like to give an object lesson.

Near a village in Dorset he let out about 20 acres of excellent arable land under the Act of 1892 in acre and half-acre plots to about 30 villagers, mostly of the labouring class. What was the present position? All the original holders had disappeared except three or four, leaving the land in a shockingly foul and impoverished condition, which in most cases involved the loss of one or two years' rent. As the acres and half-acres had been thrown up they had been taken by three men, one the village baker, one the village grocer, and one a small haulier, and they were managing the land well and benefiting from it. Needless to say that he had heard nothing in that village as to small holdings under the Act of 1907.

Another difficulty he had experienced was that the working man with a few acres of land—human nature

being human nature—would, come what may, look after his own land and leave his employer's in order to do it. He had known cases where a man had left the farmer who regularly employed him to carry his own few acres of hay, while the farmer might lose 20 or 30 or 50 acres of hay through his doing so. In such cases men had often lost their permanent employment, and he therefore thought it advisable that where possible a man should have a sufficient acreage to make an independent living upon.

No one could wish more than he did to see the small holder thrive, and he had known many men who, beginning as small holders, now occupied large farms. He had in his mind one who began 20 years ago carrying a milk can about the town, and who was now farming 400 acres. He was proud of such a man, and should like to see many more of the kind, but those men were few and far between. A man must have a real capacity for getting on, and the Commissioners would need to exercise the greatest care and discretion in making their selections.

As Mr. Vernon had said, there had of course been a very great number of applications, but he was bound to say that he regarded a great many of those as purely spurious. In some cases he feared the demand had been stimulated by political agents, and that 75 per cent. of the applicants would have to be weeded out because they had not the capital to enter upon such an enterprise.

Mr. E. SAVILL (Fellow) said there was one point on which he hoped he might be pardoned for differing from the author of the admirable Paper. He thought it was

a wise provision that practically prevented the purchase by the tenant of the small holding. Events had shown that in bad times there was some hope that the tenant might struggle through with help from his landlord, but there was very little hope for the small owner, who must disappear in times of severe stress as he had already done to such a great extent.

He did not know what sort of landlords the Councils would make. The Act provided for all kinds of stringent regulations for the acquisition of land, but there was very little said about the management, which he thought was the more important part. In hard times the Councils would be asked for reductions of rent, and it was a question whether they would be able to allow them. If they did not allow them they must turn their tenants out. It would have been a desirable provision that men should be nominated by the Board of Agriculture to act as agents in the various localities, men of position and standing who would be beyond any local interests and who would act fairly between the landlord and tenants, as they are accustomed to act in the ordinary routine of their business.

All were, he believed, in favour of enabling a certain class of man to acquire land for agricultural purposes, and all would do what they could to help the success of the Act, but no one knew who was to become the small holder. The Act was intended not only to keep people on the land but to bring back those who had left it. But he thought it would be found in practice that most of the applications would come from small local tradesmen. Since the Paper had been written it had been stated on the highest authority that a small tradesman might become a small holder, and why should he not? He would be able to pay his rent and it would be a

good thing for him, but whether his holding more land would confer those benefits upon the community at large for which, and only for which, this Act was said to have been passed was extremely doubtful.

The worst of any innovation of the kind was that it was "boomed" by the daily papers and talked about by people with no experience, with the result that the man in the street considered a small holding the one thing to be desired and the one thing in which to invest his savings. He had recently come across a pamphlet written by a man in a responsible position who would have a great deal to do with the administration of the Act—who went into rhapsodies about the thrushes singing in the morning, primroses growing in the hedges and buttercups and daisies, which was no doubt very beautiful, but it would take a good deal of that sort of thing to enable a man to keep a wife and family.

It would be a strange position if a County Council were to do as no landlord would, in giving one good tenant notice for the purpose of letting to someone else. He sympathised with the sitting tenant, for, although he would be compensated, he would have great difficulty in showing that the remainder of his holding was seriously damaged and that his rent should be proportionately reduced. He would have his remedy, however, because if he made a bad bargain he would be able to go to his landlord and demand a further reduction, and if his demand was reasonable the landlord would have to make it, and would himself have no remedy. He sympathised therefore as much with the landlord as with the tenant, but the man he sympathised with most was the small holder, the man who, without any experience, had been induced to risk all his savings in perhaps the worst speculation he could possibly find.

There were of course places where, under certain conditions and with certain men, small holdings might be a success, but they were few compared with the many places where such ventures were doomed to failure. Those of them who were at the Annual Dinner of The Surveyors' Institution, where was gathered together in one room more knowledge on this matter than can easily be brought together on any subject, could have no doubt but that the practicability of this Act was looked upon with the gravest misgivings.

Neither could they have any doubt as to the absolute honesty of purpose with which the Act was promoted. The Act had become law and surveyors would abide by it, for there was no more loyal body of men, and he was sure they could do a very great deal in the direction of pointing out to those in authority the absurdity, and even cruelty, of letting ordinary average land to men who had no experience and who were bound to lose every penny they put into it. It was also a duty to see that the farm tenant was fairly compensated, and that loss did not fall upon the landlord. He could only express a hope in conclusion that those empowered to administer the Act would seek advice from the men best qualified to give it, and that as much good and as little harm as possible would result.

Mr. W. EDWARD WOOLLEY (Fellow) said he proposed to confine his remarks principally to the question of the class of man best adapted to the acquisition of small holdings and allotments. He believed that the man on whose behalf the cry of "back to the land" had been raised might be set aside as out of the question altogether. No good could come of bringing out of the towns men who had been accustomed to a town life, and

putting them on to a small holding, whether it was five acres or fifty; for a man to be successful with a small holding or a large one, must have been taught the art of farming land, which could not be successfully learned unless a man had been trained up to it from his youth.

As to the people now on the land, the present small holders, it might be possible to select some very serviceable and useful men to occupy certain small holdings, but these were not to be met with every day.

On a small estate, of which his firm had the management, just under 1,200 acres, within nine miles from Nottingham, there was one tenant who had 5 acres, two held from 14 to 16 acres (one being a butcher and having a house), four held from 60 to 80 acres, and six held from 105 to 187 acres, all with houses and buildings. There were two villages, one at each end of the estate, and near those villages there were also 14 acres of allotments in all, about 7 acres at each place. Nearly everyone on the estate has been trained to agriculture from youth, and as a whole they were decidedly successful.

In that particular case he did not think there would be any call for small holdings, for most of the people were, he thought, satisfied, and had already got the holdings. In one or two instances the landlord had assisted the tenant with the tenant right, and he was glad to say that they had paid off the loan and were now going on in a very satisfactory manner, and rent was paid punctually every half-year.

He might mention one instance in connection with that property. About the year 1880 a carrier, who had then about 5 or 6 acres and a van which he used as a carrier to and from Nottingham and Loughborough Markets, took an additional 50 acres, and when he had

been there for some time took another farm of about 150 acres on an adjoining estate which was practically derelict, and left the 50 acres on the estate with his son, who went on with the carrier's business. The farm he took was very strong land and very much out of order, but with the help of three or four sons he did very well with it. The son who stayed on on the estate left in about four or five years and took another farm. In a year or two he came on to a very good farm near the town of Loughborough with nearly £1,000 worth of stock. One son had now a farm of nearly 200 acres under his firm, and another was doing well. The old man had just retired. That was a *bona fide* instance of a small holder who had worked successfully in the face of all the hard times and bad years. That was the sort of man who would make a small holding pay and do credit to any estate.

One point which Mr. Eggar had mentioned and which would probably be brought much to the fore, was co-operation among small holders, but only as regards the disposal of produce. For his own part he did not think the agricultural labourer cared very much for co-operation in the ordinary sense.

Farmers were too often, as one of them told him, "the most suspiciousest of men," and very distrustful of anyone who interfered with them in the management of their business. It was a good trait in Englishmen that they had a certain amount of individualism and independence. At the same time, co-operation, if well carried out among small holders with regard to the disposal of milk, butter, cheese, and other produce, as well as for the purchase of good seeds and implements, would be a very great help to them.

He for one was a great believer in the small holder,

and had spent a good deal of his professional life in trying to further the interests which the small holder represented, but while wishing him every success under the Act, he warned him not to be too sanguine, because unless a man knew his business thoroughly and had a good wife to back him, a small holding would be of no value, but a snare and delusion.

Mr. F. H. G. OSMOND SMITH (Fellow) said he hoped Mr. Rolleston would forgive him if he ventured to differ from him on the question of hire and purchase. Mr. Rolleston had stated how successful the small holdings established by the Worcestershire County Council at Catshill were. It was quite true that they were a success, but it must not be forgotten that those holdings were utilised as market gardens, and in such cases the area required for a man to make a living on was considerably less than in the case of a small farm.

The acreage from which a man could obtain a living at Catshill was stated to be about nine and a half acres. When those holdings were established the Council decided that the principle of purchase should be adopted. A large number of the holders were unable to pay the full amount of the deposit and several of them became tenants for the first three or four years. When he was on some adjoining holdings at Belbroughton he was told that a large number of the men who owned the holdings at Catshill would be only too glad to leave them and take up tenancies, and that out of 80 holders at Belbroughton not five would adopt the purchase system if they could. The holders themselves agreed that the payment of the deposit crippled them by taking the money which ought to be put into the land. Perhaps he might be allowed to quote figures showing the cost of

the holdings at Catshill. A holder at Catshill who was making his living off nine and a quarter acres acquired his holding for £379 9s. 4*d.*, £75 17s. 10*d.* being paid as a deposit, and the balance in 40 annual instalments of £14 5s. 6*d.* The cottage and buildings cost £240, £40 being paid as deposit and the balance in 33 yearly instalments of £14 4s. 4*d.* The deposits therefore amounted to £115 17s. 10*d.*, and the annual payments to £28 10s.

It was difficult to say from how small an area of farm land a man could make a living, but certainly not on less than 20 acres. Twenty acres at £30 an acre came to £600; the cottage and buildings would cost another £400. The payment of one-fifth deposit would be £200, making the yearly rent which the small holder would have to repay for fifty years 45s. an acre for land and buildings, which he could rent for 41s. 6*d.* under the hire system.

A large number of the applicants for small holdings were totally incapable of cultivating them. The object of the Act was to keep the people on the land and not, as the press had represented in many cases, to bring them back, because the majority of townsmen would be totally unfit when they were brought back. If even 25 per cent. of the applicants were suitable men, it would be found that even then there would only be about 2 per cent. who had the money to purchase holdings.

Mr. J. GERMAN (Fellow) after congratulating Mr. Savill on his excellent remarks, which he thoroughly endorsed, said that the Paper formed a very valuable addition to the *Transactions*, and showed the care and ability which all who had the pleasure of knowing the author would expect. It was a very lucid resumé

of an Act somewhat complicated by references to other Acts.

One could not help regretting that the Act had not been made self-contained. It was almost as bad as the last Agricultural Holdings Act, in dealing with which one had to refer to three or four other Acts before knowing what the position was. This, for a layman, was very often difficult work.

It was suggested by Mr. Herbert Smith, at the last Meeting, that the Act was the consequence of two misconceptions; and he argued that in the past there had not been any reluctance on the part of landowners to let land to small occupiers. At the same meeting Mr. Eggar said that a certain amount of co-operation would be necessary if small holdings were to be a success. He entirely agreed with those two speakers, and would give instances of a few facts which he thought showed the correctness of their statements.

He did not for one moment mean to say that a man could not live on a small holding. He was glad to know plenty of cases, several of them on the estates of which he had the management, where men who had been labourers within his time had risen to be farmers of 50, 70, or 100 acres. He honoured such men, but they were men who would have succeeded in any walk of life, and, as Mr. Woolley had said, their success turned largely on the fact that they were all men with good wives, able to look after the pigs and milk the cow and see to the calves, while the husband was earning the weekly wage.

He remembered that when he was at school the boys were divided into three classes, the "will-be's," the "would-be's," and the "won't-be's." The men he had been referring to were the "will-be's," and

they required no legislation. Legislation was only required for the "won't-be's," whose habits did not help them to prosper, but who were always agitating, and perhaps in the end got what they wanted.

An estate which had been under his management since about 1880 comprised about 6,800 acres, besides 600 acres of woods and 400 acres of park. He had recently analysed the composition of that estate, and found that those 6,800 acres were now divided into 119 farms. Of those farms only 24 were above 100 acres, 71 per cent. of the farms were under 50 acres, 69 per cent. under 40, 68 per cent. under 30, 57 per cent. under 20, and 35 per cent. under 10 acres. He thought that a subdivision of an estate in that way would meet the approval of the authors of the Small Holdings Act. There was only one of those small holders in arrear at the present time with his rent, and that was an arrear which gave no anxiety.

The estate in question was, with a few breaks, about seven miles long. About a mile from its southern boundary it abutted on a town with a population of 24,000, and near the centre of the estate was a village of 4,000 people. That village, up to about 24 years ago, had no railway, and even now it only had a single line. A few miles away was a quarry which supplied stone for many miles round. All the goods had formerly to be carted. In consequence the men in that village became professional "higglers," who would cart stone and all kinds of material at the very smallest cost, although perhaps not always with the very best class of horses. Those men wanted land, and they got what they wanted.

With regard to co-operation, on another estate under his management a co-operative society had for many years rented 46 acres of grass land without any house or

buildings. Two years ago he let them a farm of 193 acres with a good house and buildings, and he was perfectly satisfied with the letting.

He quoted those cases to prove the correctness of previous speakers' remarks. He thought they were typical of a great many of the estates in England, and showed that the Act was not necessary. It had, however, become law, and it was the duty of all Englishmen to carry it out, unless they could get it altered in a constitutional way, but he was afraid that the effect of the Act would be in many cases to take away from the "will-be's," and give to the "won't-be's."

Mr. RALPH S. ELLIS (Fellow) said that although he could not pretend to speak with any very great knowledge of the Act, he would like to refer to one point which had not been much touched upon by previous speakers. The question of the position of small holdings with regard to markets and the facility for marketing the produce was a vital one. It was true that in the first place there must be land which was suitable, and in the next men who were suitable. Those points were no doubt very important, but his own experience led him to believe that there must also be facilities for marketing if success was to be hoped for.

He had been agent for many years of an estate in North Lincolnshire, on which there were many small holders. The estate comprised some very good grass land near a good market town. The small holdings were not of modern creation, but had existed from time immemorial, and in every case the holders flourished very well.

They were a good class of men and very hard working, and the question of difficulties with the farmers

which one speaker had referred to, did not seem to arise. They worked for the farmers in addition to working on their own holdings, and they kept friends with the farmer who would help them to cut and cart their own hay, by being willing to work for him when there was threshing or other special work to be done.

In another case near Portsmouth, where good arable land was successfully so farmed, the great advantage seemed to lie in the fact that there were good markets in Portsmouth and Southsea to which the small holders could cart their produce.

But a third instance occurred to him on the borders of the New Forest, where the land was of the heaviest and coldest description, and would return to forest very rapidly if allowed to do so. In that case, however, a few small holders had taken up that rank arable land without any buildings except what they put on it themselves, and successfully cultivated it; they kept poultry and a cow or two, made butter, and grew a little fruit. But in their case, again, there was a ready market at Christchurch and Bournemouth, and this seemed to him to indicate that opportunities for marketing were quite as necessary as suitable land.

Mr. H. J. WIGRAM (Professional Associate) said that although many points in the Act had been very clearly dealt with by previous speakers, there was one which he thought had been scarcely touched upon. Several speakers had been very careful in pointing out the path of duty, but he ventured to suggest that the path they indicated was not in all cases the right path. The agent's first duty was to his client, the landlord, and that duty should, he considered, come even before the law. The path of duty to a client and the path of duty to

give assistance of the law in the shape of the Small Holdings Act did not run together for the whole of their length, and in fact at certain points they seemed to diverge very considerably. He was not advocating any treason or illegality, or active resistance to the law, but there might be eventualities in which it would be found desirable to exercise a little passive resistance.

At any time from 14 to 35 years hence the leases of lands now taken by the County Councils would be running out. Would they be renewed?

Before attempting to answer that question he would look at the matter for a moment from the County Councils' own point of view. A good deal of money must be laid out; in very many cases it would be necessary to put up houses and buildings, to make roads, lay out orchards, and find water supply; possibly drainage would be necessary, and land might have to be laid down to permanent grass. That would all come in the way of initial outlay. As current expenses, besides the rent, they would have to pay agents and clerks and lawyers, and to lay out money for repairs, insurance, and so on, and he was quite sure that even postages and printing would not be a small item. Was it likely that they would be able to make these small holdings pay, or rather that they would be able to run them without a bigger loss than they were allowed to incur under the Act? He thought it was most unlikely, and he ventured to say that when the leases had run out, in nine cases out of ten, the County Councils would not renew them.

What would be the next thing? The landlords would have to take the houses and buildings, the orchards and permanent grasses, and the roads, &c., at a valuation. That might be all very well for large and wealthy owners, but for the small owners and the poor landlords

it would be a very hard pill to swallow. Where were they to find the money unless they mortgaged the land?

It might be suggested that they could create a sinking fund and so lay by for bad times to come, but he thought the Act itself precluded any possibility of a considerable increase in the rent. The Act itself said that the present rent and circumstances had to be taken into consideration in fixing the rent which the County Council were to pay, so that it seemed there was no possibility of obtaining any extra rent to form a sinking fund. He should be very glad if Mr. Rolleston or anyone else would suggest a way out of that difficulty for him, because he happened to have a case bearing on this point to deal with within the next few days.

Mr. H. M. COBB (Fellow) said it seemed to him that the great difficulty in working the Act would be the question of capital and experience. He believed that when the list of applicants was fairly worn down, the survival of the fittest would bring forward the good man, but at the present moment, having had applications for reference as to respectability, &c., he felt sure that the applicants did not comprehend the responsibility or the risks of such tenancies. In many cases it would be better for a man to consider a little and meanwhile keep his money in his pocket. He believed that a great many of the applications would fall through, although no doubt the "will-be's" would make their way, and the "won't-be's" would have to go; until they went they would work at the expense of the County or of the State.

He quite agreed with other speakers that it was very

desirable, if possible, to take entire holdings and not parts, for to take a part of a holding must necessitate heavy claims on behalf of the outgoing tenant. It had not been explained who was going to pay the valuation due to the outgoing tenant. He took it that the ordinary valuation for improvements, draining, buildings, planting, &c., would fall upon the County Council, who would resolve the amount into an annual charge and add it to the rent; but with regard to the ordinary tenant right, the manuring and the cropping, and such things as an ordinary tenant would pay for, he took it the incoming tenant would have to pay.

That would be a very serious matter in some cases, and where big farms were cut up it might amount to £6 or £7 an acre for fallows and that sort of thing. Fallows, for example, would be of no good whatever to the new man, but still he would have to pay for them, or otherwise it would have to be treated as a capital charge. But manurings and croppings and fallows could not well be made a capital charge. That was a difficulty that he would be glad if Mr. Rolleston would deal with in his reply.

Section 27 seemed to him to be a little hard. At the end of the lease the County Council had the power of renewing the tenancy if they so wished, but the circumstances of the owner, the locality, or the farm itself might have varied considerably in the meantime; and it seemed to him that the landlord would have no voice in the matter. He granted that he would have had a fair rent fixed by the Board of Agriculture, but he had no voice after the termination of the first tenancy as to whether he wished to relet for another term. He could conceive that land, owing to the development of an estate and other circumstances, might

have seriously altered its character, and although a landlord might have consented to grant the first tenancy, he might be very unwilling to grant a second. Perhaps, however, the provisions as to resumption might turn out to be more elastic than they appeared to be in cold print, but as the words stood at present it seemed to him that the conditions were certainly hard.

A hope had been expressed by Mr. Eggar that the Board of Agriculture would avoid using land which was mortgaged. No one recognised more than surveyors did or more than he himself did the good work which the Board of Agriculture had done, but he was afraid that if Mr. Eggar built upon the hope that the Board of Agriculture might never touch any land that was under mortgage at the present moment, his hope was doomed to disappointment.

If small holdings were given up it would probably be for one of two reasons, either that there was no demand for them, or that they were not being worked as a success. If they were not a success, the buildings and other improvements made by the County Councils would be useless; and although that question might with safety be left to a strong umpire, there was always an unconscious tendency in favour of the maker of the so-called improvements.

But the main point in his opinion was that the landlord would have to take at the end of the term a valuation which had proved to be of no use to the outgoing tenant, and would possibly be of no use to the incoming tenant. That might be met by some sort of arrangement that in the last year of the term the land should be cultivated in some way that did not mean a big claim on the landlord, or any loss to the tenant or the County Council, in cases where it was

proved without doubt that the small holdings had not been a success.

Anyone was able to deal with land that would pay, but the difficulty would be in determining who should take the tail end of the farm. It appeared to him that if the whole holding were not taken "the tail would wag the dog." If a man had 100 acres of good land and 400 of bad, it might be that the good land was worth £2 an acre, but if it were suggested to the tenant that his rent should be reduced at the rate of £2 an acre for the land taken, he would naturally want something off the 400 acres, because he would not farm the bad land unless he had the 200 acres of good. This would materially increase the rental of the land taken.

The main difficulties would be the capital and the experience of the small holder. He came from Kent, where there were many small holdings held by good men, with advantage to themselves and to the community, but if men could come out of the towns with no experience and no capital, while so many agriculturists at the present moment were making a bare subsistence, the result would be disastrous.

He did not quite gather, neither apparently did some other speakers, whether an outgoing tenant would be in a worse position under this Act than under the new Agricultural Holdings Act. Under the latter the tenant, if the landlord gave him notice, received compensation allowance for removal on quitting his holding. Was he to have anything for quitting his holding under this Act?

Mr. R. F. STURGE (Fellow) said he would like to mention one point of a practical character. He had

lately attended one of the meetings called by the County Council of Gloucestershire to consider the best means of administering the Act, and he thought the proceedings there threw some light on the mode in which it was suggested the Act should be carried out. The County Council of Gloucestershire, in accordance with the instructions of the Minutes of the Board of Agriculture, had appointed a Small Holdings Committee. The county had been divided into certain districts, and applications for small holdings were invited. In one district with which he was concerned, in the southern part of the county, there were ten or a dozen parishes containing in the aggregate 40,000 or 50,000 acres. Out of that area the number of applications received was 67, comprising about 1,300 acres, or an average of about 20 acres each. The areas of land applied for varied in size from 2 acres to 50.

Inquiries were made as to the number of acres each applicant wanted, his experience in cultivating land, the means at his disposal in the way of capital, and some other particulars. The Council, after receiving the particulars, had them all printed on forms and circulated among the members of their committee and some others. Their next step was to call a public inquiry, at which all applicants were invited to attend, and also all owners and tenants of land which might be affected. He was called upon to attend that inquiry, at which a great many of the applicants also attended, as well as owners and tenants.

Each applicant was invited to state the particular piece of land he had his eye upon, so that, if practicable, his wishes might be met. In many cases it seemed probable that this might be done, but in others it was difficult. He must say that great consideration was

shown by the Chairman of the Council for the sitting tenant and the owner ; and where it appeared probable that the land could not be taken without hardship to either, the application did not seem likely to be entertained. Of course these were only tentative proceedings, for the applications would have to be further considered by the Council, and then he imagined it would be the duty of the Council to submit a scheme to the Board of Agriculture, who he supposed would ultimately decide.

It might be interesting to give some information as to the class of people from whom those applications came. Out of 67 applicants, 15 described themselves as farmers or farmers' sons, 12 as market gardeners, 4 as labourers, and the remaining 36, or about half the number, were mostly small tradesmen and people engaged in various ways in the villages. The area concerned comprised a good many populous villages and almost every variety of land, a good deal of which might be suitable as regards soil for small holdings.

One thing which impressed him was that in that district—and he fancied in many others—it would not be possible to carry out the Act by what would seem to be the better plan, of leasing a whole farm and cutting it up into small holdings, because, apart from the large expense that this would involve in the erection of buildings and in the making of roads, &c., it would not meet the views of the applicants, who all wanted land near their own homes. He could only hope, however, that the same consideration would be shown ultimately both by the Councils and by the Board of Agriculture, which he must say was foreshadowed by the spirit in which applications were dealt with by the Chairman on the occasion in question.

Mr. ROLLESTON said that it was now his duty to reply as well as he was able to the various questions raised during the discussion upon his Paper, but he would first take the opportunity of again expressing his thanks for the very kindly way in which it had been received, and the friendly tone of the criticisms which it had met with.

In the first place Mr. Herbert Smith made a very clear and very valuable contribution to the discussion generally, but he had dealt so considerately with the Paper that in his case there was virtually nothing to reply to.

Some questions had, however, been raised by Mr. Eggar which he would endeavour to answer as briefly as possible. With regard to the consolidation of the Small Holdings Act and the Allotments Acts into one, Mr. Vernon had answered that question by stating that a Consolidating Act had already been brought before Parliament, and the President of the Board had also promised an Act consolidating all the Agricultural Holdings Acts to date. These he thought would be a boon for which the grateful thanks of those interested in any way in these questions would be due.

There was nothing in this Act, so far as he could see, to entitle any individual to have what land he liked or in any particular parish. That was left entirely to the discretion of the Council or of the Commissioners. But should the applicant feel aggrieved at the refusal of the Council, or even of the Commissioners, to let him land in his parish, or certain other land, he could appeal to the Board of Agriculture, who would doubtless consider his application.

But it appeared to him impossible that the Councils should give every applicant what land he liked. They

would not be able to comply with all the requirements of the Act if they were obliged to give each applicant whatever he asked for. They would have to take a variety of questions into consideration in determining what land they should hire or purchase for small holdings; they had to act prudently and take due precautions; they had to avoid taking an undue or an inconvenient quantity from any one owner or occupier; and there were a variety of other restrictions upon their taking land here and there just as they liked, quite apart from the equity of the question.

An applicant could not therefore have what land he liked as a matter of course. The Council would probably give him land in his own parish if possible, but in many cases they could not do so. Councils would doubtless prefer that every applicant should come under the scheme, because, as he stated in his Paper, the Chancellor of the Exchequer had issued a Treasury minute, in which he impressed upon them the virtues of prudence in their transactions if they were to receive the benefit of the provisions of the Act, which allowed certain expenses and a certain part of the loss, if any, to be paid out of national funds, and also because it was only in the case of schemes under that Act that Councils were entitled to those sums of money from the national exchequer. It was pretty evident therefore that Councils would not act, except in very rare cases, outside schemes under the Act.

With regard to the question of who was entitled to a small holding, the Act laid down that the Councils might, for the purposes of the Act, let land on lease to those who would themselves cultivate it, and the same words appeared in the Act of 1892, so that anyone who was willing to cultivate the land himself might have a

small holding, there being no other restriction even as to sex. There was even no restriction in the case of small holdings as to where the person came from ; he need not necessarily belong to the locality in which he desired the holding.

In the case of allotments it was otherwise. The people entitled to allotments at the hands of the Parish Council must be of the labouring population resident in the district or in the parish, but in the case of small holdings there was no restriction whatever beyond that the person wanting land must cultivate it himself.

He had gathered while listening to the proceedings in Grand Committee that it was the intention of the framers of the Act that a tradesman should be entitled to a small holding should he want one. It was a little difficult to see in all cases how a tradesman, engrossed in some business utterly apart from the cultivation of land could, if he took land, be said to cultivate it himself, for if he had to pay somebody else to do it for him it would seem to take him out of the category of those who were entitled to a small holding. But he understood that it had been laid down that a tradesman might have a small holding at the discretion of the County Council, and he supposed that under that ruling the small tradesman might be said to cultivate land in the same way that a tenant of a large farm might be said to cultivate that farm, although he might not do one stroke of the work with his own hands. It was perhaps a little straining of language to say that he was cultivating it himself, but it seemed that his being a tradesman was not necessarily a bar to his having a small holding.

Another question asked by Mr. Eggar was with regard to the power of Councils to let one or more small

holdings to persons working on a co-operative system, but he would draw attention to the words of the section which laid it down that they were not only empowered to do that, but in addition they were empowered to let with the consent of the Board one or more holdings to an association formed for the purpose of creating, or promoting the creation of, small holdings, provided the division of profits among members was prohibited or restricted. He thought there was perhaps some confusion between the sort of association referred to and a co-operative society, which he took it the association need not necessarily be in any way, and the words "prohibited or restricted" were inserted to prevent such an association being merely a money-making concern.

Restricted profits were allowed, as stated in Grand Committee by the Minister in charge of the Bill, in order that outside capital might be more easily obtained. If investors were allowed a normal return upon their capital, they would be more willing to put money into such associations than if they were allowed to receive absolutely nothing in return, although they would be debarred from, and probably would not wish, any further profit than an ordinary investment return on their capital. The consent of the Board had, however, to be obtained in every case, whether it was a letting to a co-operative society or a letting to an association formed for the purpose of creating small holdings.

He quite agreed with Mr. Eggar that the Act expressly said that "more than one dwelling house" might be erected upon one holding "if it was more convenient or cheaper that they should be erected in that way. But what he had stated was still correct, that only one dwelling house might be erected on one holding for occupation with that holding.

He had intended to make some little comment upon what Mr. Eggar had said about mortgaged lands, but Mr. Cobb had stated exactly the gist of what he was about to say. He thought it would be impossible to guarantee that the Board should always be able to avoid taking lands that were mortgaged or that an owner of land compulsorily hired would never want to raise a mortgage on it in the future. He only hoped that it might be so.

It was stated by Mr. Eggar that he did not think the power on the part of Councils to renew a lease was a hardship, because in the event of their wishing to do so, the lands in question must have been found suitable for small holdings, and it was right that in such a case they should be retained for the purpose. He would like to point out that the suggestion he made was that in such an event the owner should, if he wished, have the right to ask the Council to purchase the land, as its suitability having been proved, as Mr. Eggar said, it would be no hardship to the ratepayer, and its retention for the purpose would be still more assured by purchase than by a renewal of the lease, and that without any hardship to the individual owner, who would then be free from all uncertainty as to the future. He was still therefore of opinion, for the reasons mentioned in his Paper, that the existing law was somewhat hard upon him.

He quite agreed with Mr. Eggar that effective co-operation would be of the greatest possible value to the small holder.

He would like just to refer for one moment to a remark made by Mr. Rawlence in speaking of the compensation that would be payable to the dispossessed tenant. He said he took it that there would be certainly two or three years of tenant's profit, and also that he

would be entitled to compensation for disturbance under the Act of 1906. He was afraid he was not so sanguine as Mr. Rawlence that the outgoing tenant would receive either of those items as compensation. He was afraid there was nothing in the Act to show that he was entitled to them, and he very much doubted if in practice he would be able to obtain more than the bare amount that would be payable to him in the ordinary way, unless—and he had expressed the hope in his Paper—the Board made it clear in the Order authorising the compulsory acquisition of land that the outgoing tenant was to be entitled to all equitable compensation.

He was afraid that unless the Board could see their way to state that the tenant was to be entitled somewhat fully to compensation on those lines, he would only get the ordinary compensation he would have had from his landlord if the tenancy had been terminated in the ordinary way. He did not think, unless it was laid down expressly in the Order, that he would obtain compensation for disturbance under the Act of 1906; for the reason that the dispossession of a tenant from a part of his holding by the terms of the Act was included amongst the matters in the Act of 1883, in respect of which a landlord could resume possession. Therefore if it was expressly laid down by Statute that a landlord might resume possession if the land was wanted for certain matters, it could hardly be said that its resumption for those purposes was inconsistent with good estate management, and therefore he scarcely thought, as he had said before, that the tenant would be entitled to that compensation without the Board expressing a view that he was to be so compensated.

What he had said as to the lack of some provision in the Act for giving the tenant facilities for the pur-

chase of his holding had been criticised by Mr. Savill and Mr. Osmond Smith. He quite knew that in order that the would-be owners should be successful it was necessary that they should be most carefully selected by the Council. Mr. Osmond Smith eventually admitted that the small holdings acquired by purchase at Catshill were successful, and also expressed the opinion that if the number of applicants for small holdings were sifted out, only some 2 per cent. would be able to find the money to become purchasers. He was of opinion that, even if the 2 per cent. of the applicants belonged to what Mr. German called the "will-be's" and were able to purchase their holdings, it would be desirable that they should be allowed to do so under this present Act. By the terms of the Act of 1892, 20 or 25 per cent. deposit had to be paid on the purchase money, but it was proposed in Grand Committee by Mr. Chaplin that the deposit should be only 1 per cent., and he believed Mr. Jesse Collings was bringing a Bill into Parliament at the moment dealing with that point. There was no reason why something less than 25 per cent. should not be laid down, and he still regretted that there was no such provision even if it were only to apply to 2 per cent. of the applicants.

Many speakers had pointed out that the surveyors' duty so far as the Act was concerned was to do their best to make it a success, but Mr. Wigram did not think that that tallied with their first and paramount duty, which was to their clients. Of course every Member of The Institution would necessarily consider the interests of his client as being first and foremost and in every way paramount, but, subject to that, he still thought that they would all endeavour to do what was possible to smooth the working of the Act and try to make it a

success. It was a question in his mind whether in the long run their clients' interests would not be the best served by that course, rather than by offering an uncompromising resistance and hostility to the Act from the very beginning. It was a matter, he thought, for everyone concerned to consider and weigh carefully in each individual case as it came before him. The question asked by Mr. Cobb was rather a poser. Was the outgoing tenant to be put into a worse position than a tenant dispossessed under the Act of 1906? He thought he had already stated that he feared it was possible he might be, unless the Board of Agriculture saw to it that he was not.

The hour was late, and he would only now say that the hope he expressed in his Paper that it would serve as a basis for discussion, and lead to explanations and elucidations of the Act from those who were better qualified than himself to give them, had been most amply fulfilled. He was extremely grateful for the kindly reception which had been accorded to him and to his Paper, and he would repeat what he had said at the end of the last Meeting, that the discussion had amply repaid him for any trouble he had taken in its preparation.

Mr. J. H. SABIN (Professional Associate of Council) said he only intervened to observe that the question whether the tenant was entitled to be paid compensation for disturbance would depend entirely on the further question whether the provision of small holdings was "consistent with good estate management." If it was so, then no compensation could be claimed.

The Meeting then adjourned.

APPENDIX

TO ILLUSTRATE MR. A. VERNON'S REMARKS.

EXAMPLES OF SMALL HOLDING TREATMENT

- Viz.: (1) Purchase of land by County Councils for *sale* to applicants, in specimen 5, 10, 20, and 50 acre lots ;
- (2) Purchase of land by County Councils for *letting* to applicants ;
- (3) Leasing of land by County Councils for *letting* to applicants ; and estimates of first year's outgoings and receipts ;
- (4) Estimates of cost of equipment of Small Holdings by County Councils in buildings, fences, &c., and the probable expenditure and receipts of the tenants during first year in 5, 10, 20, and 50 acre holdings ;
- and (5) The amount of capital per acre which the foregoing considerations show that Small Holders will need to secure a prospect of success.

EXAMPLES.

1. Purchase of land by County Council for *sale* to applicants.

ESTIMATES OF FINANCIAL RESULTS.

Plan
marked

A.

5 Acre Plot (*i.e.* exceeding 5 acres)

(with New Small Shed only).

	£	s.	d.
Cost of 5 acres and 7 poles at £40 per acre, say	200	0	0
Add legal costs, stamps, surveyor's fee, plan, &c., say ...	10	0	0
Fencing, 330 yards, 2 gates and posts, roadmaking, water supply, new shed, &c.	40	0	0
Estimated Cost	£250	0	0
A purchaser must pay down one-fifth	50	0	0
Leaving for loan	£200	0	0
The annual amount to repay four-fifths remainder of purchase money, viz. £200, in 50 years, 3½ per cent., will be	8	10	7
Add for repairs, any insurance, and management, say ...	2	10	0
	£11	0	7

This will equal about £2 4s. 2d. per acre per annum.

Plan
Marked

B.

10 Acre Small Holding

(with New Small Sheds, but no Cottage).

	£	s.	d.
Cost of 10 acres at £40 per acre	400	0	0
Add legal costs, stamps, surveyor's fee, plan, &c., say ...	15	0	0
Fencing, gates, water supply, drainage, &c.	67	14	0
Small farm buildings (as sketch)	35	0	0
	£517	14	0
Amount to be paid down by purchaser (one-fifth), say ...	117	14	0
Leaving for loan	£400	0	0

	£	s.	d.
The annual amount to repay this four-fifths remainder of purchase money on £400 in 50 years at $3\frac{1}{2}$ per cent.			
will be	17	1	1
Add for repairs, insurance, and management, say ...	6	0	0
	<u>£23</u>	<u>1</u>	<u>1</u>

This will equal about £2 6s. 2d. per acre per annum.

Plan
marked

C.**20 Acre Small Holding**

(with New Cottage and Farm Buildings).

	£	s.	d.
Cost of 20 acres, at £30 per acre	600	0	0
Add legal costs, stamps, surveyor's fee, plans, &c., say ...	15	0	0
„ cottage (say semi-detached) and outhouses	235	0	0
„ homestead, as sketch, yards, and fences	100	0	0
„ fencing, about 930 yards, and 5 gates and posts ...	71	3	4
„ road making, water supply, and drainage	50	0	0
	<u>£1,071</u>	<u>3</u>	<u>4</u>
Amount to be paid down by purchaser, viz. one-fifth, say	215	3	4
Leaving for loan	<u>£856</u>	<u>0</u>	<u>0</u>
The annual amount to repay this four-fifth remainder of purchase money on £856 in 50 years at $3\frac{1}{2}$ per cent.			
will be	36	10	0
Add for repairs, insurance, management, &c.	15	0	0
	<u>£51</u>	<u>10</u>	<u>0</u>

This will equal about £2 11s. 6d. per acre per annum.

Plan
marked

D.**50 Acre Small Holding**

(with new Cottage and Farmstead).

	£	s.	d.
Cost of 50 acres, at £30 per acre	1,500	0	0
Add legal costs, stamps, surveyor's expenses, &c. ...	30	0	0
„ 6-roomed cottage, with offices, say	250	0	0
	<u>£1,780</u>	<u>0</u>	<u>0</u>

	£	s.	d.	£	s.	d.
Brought forward ...				1,780	0	0
Add fencing 2,090 yards at 1s. 4d. ...	139	6	8			
„ 6 gates and posts at 50s. ...	15	0	0			
„ small homestead (as sketch enlarged) ...	125	0	0			
				279	6	8
„ water supply, roads, and drainage, say ...				50	0	0
				£2,109	6	8
Amount to be paid down by purchaser, one-fifth, say ...				422	6	8
Leaving for loan ...				£1,687	0	0
The annual amount to repay this four-fifths remainder of purchase money on £1,687 in 50 years at 3½ per cent. will be ...				71	18	6
Add for repairs, insurance, management, &c., say ...				20	0	0
				£91	18	6

This will equal about £1 16s. 9d. per acre per annum.

2. Estimate of Cost of Farm if purchased by County Council (where applicants are sufficiently numerous in one locality) and sub-divided into small holdings for letting to suitable applicants.

	£	s.	d.
Cost of purchase of farm with house and buildings, say 250 acres at £30 ...	7,500	0	0
Cost of compulsory powers, say ...	100	0	0
Cost of transfer, solicitor, stamps, plans, surveyors, and other expenses, say ...	75	0	0
	£7,675	0	0
Add for probable repairs and alteration of house to suit two or more tenants ...	100	0	0
Fencing for sub-division, roadmaking, extra water supply, and some additional buildings, say ...	225	0	0
	325	0	0
	£8,000	0	0

Amount of yearly payment required to repay a loan of say	£	s.	d.
£7,500 interest and principal on cost of land, 80 years			
at 3½ per cent.	280	7	10
Annual repayment of interest and principal on £500 (cost			
of equipment, &c.), 40 years at 3½ per cent.	23	8	3
Add for repairs, insurance, management, &c., say	50	0	0
Total annual charge	£353	16	1

If this farm were sub-divided into two holdings of 50 acres, three of 20 acres, five of 10 acres, and eight of 5 acres, it would supply eighteen tenants at an *average* cost of £1 8s. 4d. per acre per annum. Probably only two or three could occupy the altered farmhouse, but there might be cottages on the farm when purchased to house some of the other small holders.

Surely, however, if repaying cost of land with rent, such tenants would be really buying the same for the County Councils..

3. Example as to Land leased by the County Council and let in Small Holdings.

	£	s.	d.
Say farm of 250 acres leased by County Council at £1 per			
acre, rent	250	0	0
Allow for expenses of lease, stamps, surveyor's plans, altera-			
tions and divisions, drainage, fencing, water supply,			
&c., say	£500	0	0
	£	s.	d.
Rent per acre charged Council	1	0	0
Annual charge per acre to repay £500 in 30			
years at 3½ per cent.	0	2	3
Expenses of repairs, insurance, management,			
&c., estimated	0	3	3
The <i>average</i> rent to be paid per acre by			
tenants would be	£1	5	6

If special buildings, cottages, or other works were necessary for some of the tenants, then the annual payment to repay such cost would be added to the total rent of the holding or holdings, and this sum divided by the area would give the rent per acre. Thus if a small holding of 20 acres at 25s., viz. £25, required an expenditure in such equipment of £300, the extra annual cost, 30 years at $3\frac{1}{2}$ per cent., would be £16 6s. 3d., making the rent about £2 1s. 4d. per acre.

4. Examples as to working Small Holdings on Lease and Approximate Estimates of Receipts and Expenditure by Small Holders.

A. ESTIMATE. 5 acres and 7 poles.
(With Shed and Pig Sty. No Cottage.)

EQUIPMENT:

<i>Buildings, Fencing, &c.</i>	£	s.	d.	£	s.	d.
Fencing, say half boundaries, 330 yards at 1s. 4d.	22	0	0			
2 gates and posts	4	0	0			
Shed and pig sty	10	0	0			
Water provision—tank, pump, &c.	8	0	0			
Paths and roads, say	6	0	0			
	£50 0 0					

Amount to be provided by County Council (in addition to expenses) and repaid by instalments.

Estimated Cost First Year.

5 acres, 1 plough, harrow, roll, weeding, &c., at 16s.	4	0	0
25 fruit trees and planting ($\frac{1}{2}$ acre 30 ft. apart), 2s.	2	10	0
Potatoes, about 20 poles	1	0	0
Bush fruits—currants, &c., and planting 500 at 3d.	6	5	0
Garden—spade labour, roots, plants, &c., 60 poles at 1s. 6d.	4	10	0
1 acre barley and sainfoin seeds and sowing ...	2	0	0
„ vetches, clover, and green crops and sowing	1	10	0
„ wheat or rye and sowing	0	18	0
„ oats, beans, or peas, and sowing	0	17	0
	£23 10 0		

	£	s.	d.	£	s.	d.
Brought forward	23	10	0			
5 acres manuring, 10 loads to acre, at 4s., and carriage at 2s.	15	0	0			
Purchase of 2 young sows 35s. and food	8	0	0			
10 fowls and food	1	10	0			
Labour, one lad continuously, 52 at 6s.	15	12	0			
Small holder, 2 hours per day						
Rent, &c., say, £5 10s.; Rates, &c., £2 10s.; interest, say £4	12	0	0			
				75	12	0

Estimated Return towards end of First Year.

Garden produce (60 poles), say	12	0	0			
Fruit bushes	2	0	0			
Potatoes and roots	10	0	0			
Barley and straw (sold standing)	4	0	0			
Vetches, clover, and green crops (sold standing)	6	0	0			
Wheat and straw (sold standing)	5	0	0			
Oats and straw (sold standing)	5	0	0			
Two sows and litters	10	0	0			
Poultry, eggs, and small returns	4	0	0			
				58	0	0
Deficiency on First Year				£17	12	0

A.

By the foregoing calculation the Small Holder must expend—in addition to £50 for equipment advanced by the County Council—something like £75 2s. the first year, and only realises about £58, while his own house and living must be provided by his exertions in some other calling. He would thus have a deficiency, less the value on the land, at the end of the first year of about £17 12s., and he would have to provide or borrow money for the purchase of a horse, cart, plough, and a few farm implements, and pigs, &c. The value to an incoming tenant of his fruit trees, garden, sainfoin, &c., would be about £20 to £25.

The second year his expenses would probably be about £50 (without manuring again), and his receipts should be £60 to £70. These would gradually improve with

his skill, growth of fruit, &c., till he might at the best realise £100 per annum from the land, and the use of his horse and cart for hiring off his small holding, or a profit, say, of £50 per annum, while throwing in more and more of his own time and exertions.

If he farmed without fences or buildings, and hired his cultivations, he could probably realise about £20 to £25 per annum at an annual outlay of £15 to £17, including rent and rates, and interest on loan from County Council. But to tide over the first two or three years he must have at least £50 to £75 available.

B. ESTIMATE. 10 acres.

(With Small Farmstead, but no Cottage.)

EQUIPMENT :

<i>Buildings, Fencing, &c.</i>	£	s.	d.	£	s.	d.	£	s.	d.
Fencing, 715 yards at 1s. 4d., say ...	47	14	0						
5 gates and posts, at £2 ...	10	0	0						
Water supply and drainage to buildings, say	10	0	0						
					67	14	0		
Farm buildings as sketch				35	0	0			

Amount to be provided by County Council (in addition
to expenses) and repaid by instalments £102 14 0

Farming Stock.

Horse, cart, and harness, say	25	0	0			
Second-hand plough, horse-hoe, roll, harrows, &c....	6	0	0			
Spades, forks, wheelbarrows, and small tools	2	0	0			
Water tank, pig troughs, &c.	3	0	0			
2 young sows in pig, at 40s.	4	0	0			
20 fowls, at 2s.	2	0	0			
Dog kennel and dog, say	0	5	0			
					42	5 0

Estimated Cost, First Year.

	£	s.	d.	£	s.	d.
10 acres, 1 plough, harrow, roll, weeding, &c., at 16s.	8	0	0			
50 fruit trees and planting (1 acre, 30 feet apart), at 2s.	5	0	0			
Potatoes, 40 poles	2	0	0			
1,000 bush roots, at 3d.	12	10	0			
1½ acre permanent pasture seeds and sowing	2	0	0			
1½ acre grass, beans, peas, and sowing ...	2	0	0			
1½ acre wheat or rye	1	7	0			
1½ acre oats	1	6	0			
1½ acre roots, potatoes or green crops, say	3	0	0			
1½ acre barley sown with sainfoin ...	3	0	0			
10 acres manuring, 10 loads to acre, at 4s., and carriage 2s.	30	0	0			
Estimated horsekeep, 52 weeks, at 8s. ...	20	16	0			
Estimated pigs' and poultry food, &c. ...	6	0	0			
Harvesting expenses, cutting, threshing, cleaning, marketing, say 6 acres at 18s.	5	8	0			
Cost of labour, say 1 man one-third time, or 100 days at 3s.	15	0	0			
1 lad continuously at 10s. per week ...	26	0	0			
1 year's rent of land, say at £1	10	0	0			
1 year's rates	2	10	0			
Interest on money borrowed and expenses of County Council, viz. £102 14s., say	6	0	0			

£161 17 0

*Estimated Return towards end of
First Year.*

	£	s.	d.
Meadow—no profit first year	-		
1 acre beans or peas and haulm, say ...	10	0	0
1½ acre wheat, 4 quarters at 32s. ...	9	12	0
Allow for straw from ditto	1	10	0
1½ acre oats, say 6 quarters at 16s. ...	7	4	0
Allow for straw from ditto	2	0	0
½ acre potatoes	8	0	0
1 acre roots, &c.	12	0	0
1½ acre barley and straw	7	10	0
Orchard and garden produce	26	0	0
Proceeds on sale of pigs and litters ...	15	0	0
Proceeds on sale of poultry and eggs ...	5	0	0

£103 16 0

	£	s.	d.	£	s.	d.
Brought forward ...	103	16	0			
Value of hiring horse and cart for other work, say 200 days at 4s. ...	40	0	0			
(Other hiring put in exchange for contra services.)						
				143	16	0
Deficiency on First Year ...	£18	1	0			

B.

This calculation for 10 acres Small Holding shows an outlay of £102 14s. for fencing, buildings, &c., which the County Council should provide. The first year's expenses, including purchase of stock, would be about £161 17s., and the estimated return towards the end of the first year £143 16s., leaving a deficiency up to that date of £18 1s., without including any allowance for provision of cottage, but it includes interest on a suggested sum of loan of County Council of £102 14s., and the Small Holder would, on the above figures, at the end of the first year's enterprise, be, as above-mentioned, £18 1s. out of pocket.

The return from produce is estimated on a somewhat liberal scale, and no allowances are made for casualties or contingencies, and the Small Holder would have to derive his own living and rent of house from other resources than this land; but during the second and successive years the net revenue should improve, and in five to ten years attain its maximum power of production, except as to the orchard trees, which would be in full bearing in 15 to 20 years.

To farm 10 acres thus, with any prospect of success, the applicant should show the possession of at least £100 capital.

C. ESTIMATE. 20 acres.
(With Homestead and Cottage.)

EQUIPMENT :

<i>Buildings, Fences, &c.</i>	£	s.	d.	£	s.	d.
Cottage and offices, say	370	0	0			
Fencing, 930 yards at 1s. 4d.	62	0	0			
6 gates and posts at 50s	15	0	0			
Farm buildings, as sketch	100	0	0			
Water supply, drainage, roads, &c., say	53	0	0			
				£600	0	0

Amount to be provided by County Council (in addition to expenses), and repaid by annual instalments in 30 years with rent, viz. £32 12s. 6d. per annum ...

<i>Farming Stock.</i>	£	s.	d.			
2 horses, wagon, cart, harness, &c.	50	0	0			
2 ploughs, horse-hoe, roll, harrows, &c.	10	0	0			
Spades, forks, rakes, hand-drill, &c.	8	0	0			
Water tank, pig troughs, &c.	7	0	0			
2 heifers in calf at £10	20	0	0			
4 young sows in pig, say 35s. average	7	0	0			
30 fowls at 2s.	3	0	0			
Dog kennel and dog, and sundries	15	0	0			
				£120	0	0

<i>Estimated Cost, First Year.</i>	£	s.	d.
20 acres, horse or steam ploughed, rolled, harrowed, weeded, &c., at 15s.	15	0	0
125 standard fruit trees and planting at 2s.	12	10	0
Bush fruits (gooseberries, &c.) and planting 1,000 at 3d.	12	10	0
Potatoes, strawberries, and vegetables, and planting	5	0	0
2½ acres wheat and sainfoin seed at £2	5	0	0
2½ acres barley and grass seeds at 30s.	3	15	0
2½ acres oats at 18s.	2	5	0
2½ acres roots and vetches, manure, &c., at 40s.	5	0	0
2½ acres beans or peas at 30s.	3	15	0
4 acres meadow laid down with permanent seed at 50s.	10	0	0
20 acres manuring, 10 loads at 4s., and carriage at 2s.	60	0	0
Labour: 1 man continuously at £1	52	0	0
„ 1 lad at 10s.	26	0	0
Food for horses, pigs, &c., and sundries	75	0	0
Rent, &c., £1 per acre, rates, &c., £14, and interest on £600 County Council loan and expenses, say, per annum	66	12	6

£474 7 6

(Or rent per area, besides rates, of £2 12s. 7½d.)

Estimated Returns towards end of First Year.

	£	s.	d.	£	s.	d.
Meadow (new laid down), no return	—					
2½ acres orchard and fruit bushes	25	0	0			
2½ acres wheat and straw at £5	12	10	0			
2½ acres barley and straw at £4	10	0	0			
2½ acres oats and straw at £5	12	10	0			
2½ acres beans or peas at £6	15	0	0			
Potatoes, strawberries, vegetables, &c.	40	0	0			
Profit on pigs and poultry, say	25	0	0			
Value of horse hire, &c., say 100 days, 2 horses and men, at 12s.	60	0	0			
Value of 2 cows, milk, &c.	20	0	0			
Value of hiring out horses and carts, say 120 days at 8s.	48	0	0			
				268	0	0
Deficiency on First Year ...	£206	7	6			

This estimate for a 20-acre holding seems to show that a Small Holder should have at least £160 money of his own to have any hope of success. Future years, as the meadow became established and the orchard trees matured, would show better returns.

D.

ESTIMATE.

50 acres.

(With Homestead and Cottage.)

EQUIPMENT :

<i>Buildings, Fences, &c.</i>	£	s.	d.	£	s.	d.
Cottage and offices, say	370	0	0			
Fencing, 2,090 yards at 1s. 4d.	139	6	0			
6 gates and posts at 50s.	15	0	0			
Farm buildings as sketched with some additions	140	0	0			
Water supply, drainage, roads, &c.	75	0	0			
Sundries, say	60	13	4			
				£800	0	0

Amount to be provided by County Council (in addition to expenses) and repaid by annual instalments in 30 years at 3½ per cent. = £43 10s., or 17s. 5d. per acre.

<i>Farming Stock.</i>	£	s.	d.	£	s.	d.
2 horses, wagon, carts, harness, &c., say ...	75	0	0			
2 ploughs, horse-hoe, roll, harrow, &c. ...	15	0	0			
Spades, forks, rakes, and smaller tools ...	12	0	0			
Water tank, troughs, &c.	10	0	0			
4 young sows in pig, say	7	0	0			
3 heifers in calf at £10	30	0	0			
40 fowls at 2s.	4	0	0			
Dog kennel (and dog) and sundries	20	0	0			
				£173	0	0

<i>Estimated Cost, First Year.</i>	£	s.	d.
50 acres, 1 plough, roll, harrow, picking weeds, &c., at 15s.	37	10	0
2½ acres orchard trees, 125 at 2s.	12	10	0
Bush fruits on say 1 acre, 1,000 at 3d.	12	10	0
Potatoes, &c., say 1 acre in orchard	8	0	0
½ acre soft fruits	5	0	0
10 acres laid down to meadow at 50s.	25	0	0
5 acres roots and potatoes at 80s.	20	0	0
5 acres barley and grass seeds at 30s.	7	10	0
5 acres clover and sainfoin at 25s.	6	5	0
5 acres wheat at 20s.	5	0	0
5 acres oats at 18s.	4	10	0
10 acres grass, 5 years lay, at 20s.	10	0	0
Labour : 1 man continuously at 20s.	52	0	0
„ 1 man continuously at 15s.	39	0	0
„ 1 boy continuously at 10s.	26	0	0
Food for 2 horses, pigs, fowls, &c.	50	0	0
Sundry labour and expenses, say	20	0	0
Rent, 22s. per acre, and interest on County Council advance, viz. £800, and share of expenses, say	95	15	0
Rates, &c., say	20	0	0
	£456	10	0

(Or rent per acre, besides rates, of £1 18s. 4d.)

<i>Estimated Return towards end of First Year.</i>	£	s.	d.
10 acres meadow (no profit)	—		
Orchard and fruit trees, &c., say	25	0	0
Potatoes in orchard	12	0	0
Soft fruits, strawberries, &c.	15	0	0
5 acres roots and potatoes	60	0	0
5 acres barley and straw at £4	20	0	0
5 acres clover and sainfoin at 50s.	12	10	0
	£144	10	0

			£	s.	d.	£	s.	d.
Brought forward	...	...	144	10	0			
5 acres wheat and straw at £5	...	...	25	0	0			
5 acres oats and straw at £5	...	...	25	0	0			
10 acres, 5 years lay, at 50s.	...	...	25	0	0			
Profit on pigs and poultry, say...	...	...	25	0	0			
Value of horse hire, say carts and 2 horses, 50 days, and man, at 12s.	...	...	30	0	0			
Profit on cows and dairy	...	...	30	0	0			
Flowers, bees, and sundries, say...	...	...	10	10	0			
						315	0	0
Estimated deficiency First Year	...	...				£141	10	0

With good management and sufficient capital this 50-acre holding should show fair returns and profit in a few years. No allowance is made, however, for bad seasons or casualties. And such a Small Holding involves no small risk until it has been brought into full productiveness.

5. Estimate of the Capital required by Applicants for purchasing or renting land bought or leased by the County Council, the cost of their holdings being equipped with buildings, fences, road, water supply, and drainage, under the borrowing powers.

1. Purchase of Land by Small Holders from the County Councils.

5 acre plots.						Total.			Per acre.		
			£	s.	d.	£	s.	d.	£	s.	d.
5 acre plots, say one-fifth cost	...	...	50	0	0						
Working capital	...	...	50	0	0						
						100	0	0	20	0	0
10 acre plots, say one-fifth cost	...	...	117	14	0						
Working capital, say ...	...	...	102	6	0						
						220	0	0	22	0	0
20 acre plots, say one-fifth cost	...	...	215	3	4						
Working capital, say ...	...	...	184	16	8						
						400	0	0	20	0	0
50 acre plots, say one-fifth cost	...	...	422	6	8						
Working capital, say ...	...	...	377	13	4						
						800	0	0	16	0	0

2. Renting of Lands purchased by County Councils.

		Rent, &c., per acre.				Total.		Per acre.	
		£	s. d.			£	s. d.	£	s. d.
5 acre plots	2 4 2	Working capital required				75	0 0	15	0 0
10 do.	2 6 2	do. do.				100	0 0	10	0 0
20 do.	2 11 6	do. do.				160	0 0	8	0 0
50 do.	1 16 9	do. do.				350	0 0	7	0 0

3. Renting of Land leased by County Councils.

(The same capital required as No. 2.)

Rent, &c., per annum	...	...	£1 5s. 6d.	average per acre.
Or with equipment	...	...	£2 1s. 4d.	ditto.

4. Cost of equipment by County Councils in buildings, fences, roads, water supply, &c.

				£	s.	d.
For 5 acre plots as sketch A	...	...	...	50	0	0
For 10 do. do. B, say	...	...	...	100	0	0
For 20 do. do. C (with cottage)	...	...	...	600	0	0
For 50 do. do. D (with cottage)	...	...	...	800	0	0

5. Applicants for Small Holdings will require for proper and successful cultivation from £15 per acre on plots of 5 acres, £10 per acre for 10 acres, £8 per acre for 20 acres, and £7 per acre for 50 acre plots, in all cases where they simply rent the holdings.

QUANTITIES: SHOULD THEY FORM PART OF THE CONTRACT?

By F. C. HUNT (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION held on Monday, March 30th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

In the absence of the author through indisposition the Paper was read by the Honorary Secretary, as follows:—

I take as my epigraph the opening verse of Longfellow's well known poem, "A Psalm of Life":

"Tell me not, in mournful numbers,
'Life is but an empty dream!'
For the soul is dead that slumbers,
And things are not what they seem."

I choose it because I am about to advocate the old-fashioned method in preference to the new fashion, and this poet has, alas, become old-fashioned. The first line is useful to me in its exhortation to avoid mournful numbers, for they are only a shade less terrible to the speaker or writer than the fear of being wearisome. At the same time I will not attempt the prevailing fashion

of being humorous. But it is on the last line of this verse,

“ And things are not what they seem,”

that I wish to lay stress in regard to the subject of my Paper this evening.

I have put my title in the form of a question, as in the course of my remarks I shall ask many questions, with the object of provoking discussion on the one hand, and trying on the other hand to save myself from the accusation of being dogmatic.

To avoid a tiresome reiteration of the words “ quantities forming or not forming part of the contract,” I am adopting the words “ new system ” to denote when they do, and “ old system ” for when they do not, form part of the contract.

It is interesting to note that in recent years two important corporations have changed their systems. A few years ago His Majesty's Office of Works changed from the old and adopted the new system. Last year we had the converse. The Metropolitan Asylums Board, after giving the new system a trial of some seven years, reverted to the old system.

When The Institution first proposed to offer a medal for the best Paper read during the session I happened to be discussing the question of quantities forming part of the contract with an old personal friend of mine, a Fellow of The Institution and a champion of the new system. I offered to write a Paper in opposition to the new system if he would write one in support of it, and we would compete for the medal, but he declined my challenge, and the contest did not come off.

Now I purpose rather to have a desultory talk with you on this subject: to point out what are, in my opinion, the defects of the new system, and to suggest an alternative

course, and further to point out what requires to be put in order if quantities are to form part of the contract; concluding with a few remarks on the question of quantities generally.

I know that I am in a minority on this vexed question of the new and old systems. I know that the new system will continue and probably become more and more general. The greater therefore is the necessity to point out these matters, so that our clients and ourselves may be protected and safeguarded according to law.

This has been termed a "vexed" question, but I fear that most surveyors, even Fellows of The Institution, do not trouble themselves about it.

If the question should perchance be raised, the surveyor's answer usually is, "Oh, I don't care which way it is. I do my work just the same in either case."

That may be, but I maintain that that is not the right attitude to take up. He should care, if not for the sake of what is right and proper, for the selfish reason that he is thereby encouraging incompetent men to enter the field of competition.

He generally adds, "It is so much fairer to make quantities part of the contract; you can adjust any thing."

With this I cannot agree at all, as I will try to explain. In plain English it is trying to set up so-called equity as against law; a common fallacy, but one that the professional man should not adopt. After all, what is this so-called equity? In plain English again it is like our old friends Orthodoxy and Heterodoxy: what the speaker thinks to be right or wrong. Law, I take it, is like Nature in being inexorable. It may come down heavily on the individual, and undeservedly so in certain cases, but in the main it is

right, for the simple reason that it is the law. Whether we like it or whether we do not, we should always see that we are in harmony with the law of the land, and as professional men acting for others we are really bound so to do.

But with equity it is a case of the human mind trying to do the right thing. The human mind, though, is limited, very limited, and cannot foresee all the consequences of pursuing a certain course, however right-minded the individual may be.

I wish to give to those who introduced the new system all credit for good intention. Where I join issue with them and their followers is on the point that the matter has not been properly and thoroughly thought out. In shifting from the old system, under which we all knew where and how we stood, we are landed into a situation where we are surrounded on all sides by doubt and uncertainty.

I am fortunately speaking to an audience thoroughly acquainted with the subject, and therefore I do not wish to labour any point or dwell too long upon matters which are clear to everyone. What I wish is to draw attention to certain points and to invite members to think seriously thereon.

My object is to show that the principle of making quantities form part of the contract is wrong, and further (and this I frankly admit to be my aim) that the new system helps incompetent men to trade against us.

In itself the expression "Quantities forming part of the contract" is a loose one. In most of the cases which I have seen, when they are so made the wording has been that of the form issued by the Royal Institute of British Architects: "The works shown upon the said

“drawings, and described in the said specification, and
“included in the said bills of quantities.” Note—“bills
“of quantities.”

The dimensions and abstracts therefore do not presumably form part of the contract. But is that so? The generally accepted axiom seems to be that the part contains the whole, and does it not therefore follow that if the bills form part of the contract the material which goes to their making is also part of the contract.

If the dimensions and abstracts do not become contract documents, is use to be made of the same by the building owner's surveyor in dealing with variations, and is the contractor to have equal access to, and use of, the original papers? If he does not have such access and use, then the vaunted fairness of this modern innovation in preparing contracts falls to the ground.

For example, labours on stone in the bills of quantities contain so many feet superficial of beds and joints. In adjusting the variations how is the contractor to know on which system, out of many, these labours are measured, unless he has recourse to the original dimensions?

Or another example: in measuring glazed brick facings, how is the contractor to know what allowance, if any, has been made in the dimensions for waste at the internal angles?

If the dimensions do form part of the contract, whose property do they become on the signing of the contract deed? No copy can be made as good for practical purposes as the original dimensions. Are the original dimensions to be ear-marked as contract documents, and into whose possession do they pass?

I will not attempt to answer these questions, but I do invite clear and definite replies from the champions

of the new system, as all these points should be made clear. It does not suffice to say that the surveyor, of course, retains possession of his own property.

If the dimensions do form part of the contract, does it not follow that they should be in a prescribed form? Under the old system the axiom was that the surveyor could arrive at the items in the bills of quantities in any way he liked, provided that he got there accurately, but, under the new system, suppose that the quantity of glass is in dispute, ought not the dimensions making up the total in the bill to be clearly traceable by anyone having a knowledge of quantities?

Suppose a quantity surveyor is so fortunate as to have as a client one of the large railway companies, and to have an agreement to take out the quantities for their work at a low rate of percentage in consideration of the magnitude of the work and the frequent repetition of the same. He has to take out a number of, say, goods-sheds all alike in superstructure, varying probably only in foundations and drains. Naturally he takes out the superstructure by itself once for all and uses that as a type or standard. Then the different bills are made up from this type with the special foundations, drains, &c., to each place.

If Contractor Smith for Oxbridge Goods Shed raises a question on the glass, and Contractor Jones raises a question on the lead for Camford Goods Shed, are all the dimensions for each goods shed to be included in the contract documents for each job? At best they would only be copies, and, unless facsimile copies, they would probably be of but little use for research by the contractors. But the original set of dimensions for the type or standard would be of great help to the

railway company's surveyor in enabling him to satisfy himself whether his work was correct or not.

If dimensions are to be in a prescribed form what is that form to be? Surely that is an important question to have cleared up if quantities are to form part of the contract.

The old custom was for surveyors to decline to allow contractors to have copies of the dimensions even if they were willing to pay for them, and many firms of surveyors still adhere to this custom. Is this fair to the builders in any case? I think it is undoubtedly unfair if quantities form part of the contract. My view is that if bills of quantities do form part of the contract, then the contractor is entitled to access and free use of the original dimensions, and also, if he so desires, to a facsimile copy of the dimensions free of any charge.

Even then the building owner's surveyor has an undue advantage in case of quantities and dimensions being overhauled for shortage or errors. The contractor thinks he is aggrieved and tries to prove an error, but the surveyor can generally manage to bring forward something to counterbalance the claim. For instance, the contractor can prove that sufficient glass has not been taken, but the surveyor retorts showing that the painting is very full—but the painting would have been full in any case even if the glass had been correctly taken; so the contractor is really a loser.

In considering the question whether bills of quantities should form part of the contract or not, I recognise that cases do occur where the surveyor has to get his work done somehow, in "next-to-no time," and from incomplete information, drawings, and specification. In dealing with these cases I can see the necessity of

adopting the new system in justice to all parties concerned—building owner, contractor, and surveyor.

But, as a general rule and as a principle, I contend that the quantities should not form part of the contract, and, even in the cases just mentioned, I think there is an alternative and better course, which I will deal with later.

On tendering, a contractor looks to see who is the quantity surveyor employed, and if he knows him to be a reputable man he prefers that the quantities should not form part of the contract. It is significant, however that, if on the other hand, the name at the foot of the endorsement of the summary is unknown or unfavourably regarded for any reason (*e.g.* in the case of an architect taking off his own quantities) then the contractor requires that the bills of quantities should be made part of the contract.

By admitting the system of making the quantities part of the contract, the door is opened at once for incompetent men to do surveyors' work, for any man can get hold of a set of bills of quantities and text books, and it is then easy for him to set to work and write down so many cube yards of dig, concrete, &c., so many rods of brickwork, &c., right through the chapter. He takes care to have enough in the aggregate, knowing that he will not be found out by the building owner. He may be short in some of his items, and the contractor may complain, but if he is shrewd he can generally manage to wriggle out of any difficulty in which he may find himself landed. But how does the building owner fare in such a case?

The incompetent man is at first fearful of undertaking the work, for he has a dread of responsibility and is afraid that he may be brought to book for any

mistakes that he may make. Under the old system there was a good chance of his being found out and possibly made to suffer ; but under the new system he rushes in, trusting that all will come right in the end. This is not an exaggerated view, and there is no occasion for me to dwell upon it, for, to our cost, most of us know it only too well. I can say with confidence that the new system has brought into the field many men who have had no proper training as quantity surveyors.

Under the old system all parties interested in the contract know exactly where and how they stand. The building owner agrees to pay a lump sum for certain work duly shown and described by the drawings and specification and he can vary that amount by granting orders, but he always knows the extent of his liability. The contractor is in a safe position, because he knows that if his prices are right and the quantities are right, he can tell how he stands. The surveyor knows that his work, if properly done, is done once for all time.

Under the new system all is chaos. The surveyor may be harassed all the way through by questions asked and doubts thrown on his quantities. His work is never done. The contractor worries to try to find some shortage or error in the quantities whereby he may obtain some benefit or advantage. The building owner is generally in a fool's paradise, thinking that he knows the extent of his liability, but he will often find that the amount of the contract was only a myth, which is subject to considerable alteration before it can be said to represent his liability.

I know it will be said by light-hearted critics that much of this is equally likely to happen, or even more so, owing to extras. But that is really quite a separate

question, for the building owner ought to have cognizance of extras; but he cannot well know that he will have to pay a further sum of, say, £200 because the surveyor forgot to take the drains.

The priced bills of quantities should be examined by the quantity surveyor before the signing of the contract. That is the theory, and the right theory, though in actual practice I fear it is often left undone.

Under the new system, suppose that the successful contractor does not affix prices and money values to several items, is he, when it comes to the stage of treating variations on the contract, to be paid a fair rate for such items, or is he to go without, as he would do under the old system? If he has priced an item of, say, 100 feet at 1s. and it has been extended as 8s. 4d., is this to be adjusted or not: or if in casting up a page he is, say, £100 short in his total, is this to be put right?

If the answers to these questions are in the contractor's favour it does indeed become of great importance to examine the priced bills of quantities before accepting a tender. It would not need much ingenuity on the part of a zealous estimating clerk to come out lowest in the list of tenders and so get the contract, then later on to be able to show that there were mistakes which would enable his firm to add an appreciable amount to the contract sum.

"But this would be fraud," exclaims my imaginary opponent. Then I would remind him that the onus of proof of fraud would be thrown on the advisers of the building owner.

In answer to a question as to what constitutes making bills of quantities form part of the contract, I should contend that the right and proper way so to do is to mention the bills of quantities in the clause which

generally reads as follows in the contract deed: "In
" consideration of the sum of , to be paid at the
" times and in the manner set forth in the said con-
" ditions, the contractor will upon and subject to the
" said conditions, execute and complete the works shown
" upon the said drawings and described in the said
" specification and bills of quantities."

It should also be mentioned in the bills of quantities themselves, the specification, and the form of tender. If not so mentioned the contractors who tender rightly draw the inference that they do not form part of the contract. What often happens? The incompetent man is very keen that they should form part of the contract, and decides without consulting the architect—who very likely has no strong views on the matter—that he will do his best so to arrange it; so he puts it in the bills of quantities themselves, in the form of tender, and also in the specification, if he has a finger in that pie. But the architect sees to the contract deed, and has copied an old form which does not mention the quantities. Then what is the position? It can be argued and has been argued by able counsel from both points of view.

My firm conviction is that unless the quantities are mentioned, as I have before said, in conjunction with the drawings, general conditions, and specification, they do not form part of the contract, although it may be so stated in the specification, which is mentioned in the contract deed.

If quantities forming part of the contract were mentioned in the form of tender, but not in the contract deed, then a question might arise whether the contractors tendered on the right basis. But in such a case I do not think that the successful contractor could raise any issue, as on signing the contract deed it was

his duty to see that it was in order from his point of view, and having signed the deed he must abide by the terms thereof.

At the same time this point of what constitutes making quantities form part of the contract is so moot that I should not be surprised to hear of a judge or arbitrator holding the opposite view to that which I have expressed. Surely a question so important from a legal point of view should be definitely settled.

Now we come to "measuring up," and the question arises whether the building owner's surveyor has the right, whether quantities form part of the contract or not, to go into any variations from the drawings or specification. I contend that under the old system he has no such right. He should only treat such variations as are mentioned in written orders for extras and omissions.

Here again we come upon a troubled question, for we all know how difficult it is to get architects to comply with the ordinary conditions of contract relating to written orders. But the surveyor can and should help the architect in this matter. It is easy for the surveyor to pay a preliminary visit to the building with the architect and, having obtained the necessary information, the surveyor can prepare written orders to cover what he requires in this respect, and get them signed by the architect before the measurements begin. There is nothing unfair about this, as the builder on his side should see that he obtains from the architect written orders for extra work.

So, under the old system, the programme is clearly defined, and the measurers for the contracting parties know what they have to do, viz.:

1. Treat written orders,

2. Treat provisional sums or quantities, and
3. Treat prime cost values.

Now let us deal with the new system under which quantities do form part of the contract.

No one knows the extent of the work to be done until a total is actually agreed. Each side may at any moment bring forward some question to be gone into, and to give an illustration of this we will suppose the contractor knows that the concrete is short, but believes that the excavation and brickwork are excessive. He will wait and see if it is wise to bring forward this shortage of concrete and run the risk of other questions being thereby opened up. The measurements proceed, and the contractor finally thinks he can safely bring forward his claim. Then search of dimensions follows, and the result is often quite sporting. If the building owner's surveyor knows his work, he should see that his client gets full value in any case, but the incompetent man is nearly sure to be worsted by the contractor. Again, the building owner's surveyor starts measuring some variation, which undoubtedly is a variation, but unless the demarcations of the same are defined by a written order the measurements may extend beyond the proper limits. Who, then, is to determine the limits? Practically it results in the measurers themselves becoming the arbiters, and thereby exceeding their duties under the terms of the contract.

The alternative method to making the quantities form part of the contract, where circumstances and time did not permit the quantities being prepared in the proper way, is, I believe, known as the Scotch method, viz., where a schedule is prepared with approximate quantities made to total up to about what is to be spent. This can be prepared in a very short time, the contract can

be let, and the work proceeded with almost at once, the measurements being taken during the progress of the building. The surveyor's fees can be arranged accordingly, *e.g.*, one per cent. for the schedule or bills of quantities, and one and a half per cent. for the measuring. These rates should under ordinary circumstances pay the quantity surveyor for his work, and he would then be giving to the building owner better value in money and time than under either the new or old system of quantities.

I am alive to the fact that there are objections to this course, but I mention it for the purpose of showing that there is an alternative way, and in my opinion a better way than the ordinary custom of taking out the quantities from incomplete drawings and information and then making the quantities form part of the contract.

An abuse of which I have heard lately in connection with this schedule system is where the building owner has such a schedule prepared for a certain building and then reissues the same schedule again and again for other buildings not necessarily similar either in character or size. This is unfair to the contractors who tender. For the first building the quantity of, say, brickwork may be put down as 100 rods, and the actual quantity of that material used may come out there or thereabouts; but in the case of the second building the quantity of brickwork may not come to even 20 rods. Consequently the contractor is quite in the dark as to how to get really close prices.

By a natural sequence this brings me to my next point, which is whether we quantity surveyors are really wanted? Whether we are not in danger of taking ourselves too seriously?

I do not wish to take up time by drawing a compa-

risson between the state of our profession now and, say, fifty years ago. We must all realise the change, and that the change is to our detriment. How can we best adapt ourselves to the present state of things and continue to justify our *raison d'être*. If we cannot do so we are in danger of finding our occupation gone.

A man may delay for some time going to his tailor to order a new suit, but when he has made up his mind, he wants the suit delivered as soon as possible. Much more is it so with the man who decides to build.

A man who desires to build a mansion purchases the site and his outlay begins. He finds expenses running on as time goes by, and he is anxious to be in possession of his house, but his architect requires time to prepare his designs. The building owner, so far an owner only in name, can understand that and enjoys that part of the proceedings, but when the design has been settled he begins to fret and wants to know when the work is going to start. But the architect requires much more time to prepare his contract drawings, &c., and has then to bring in his quantity surveyor. If the architect is bold enough to put matters plainly and squarely, the employer is usually astonished to hear that this individual will require about six weeks for his work, and that probably a further six weeks must elapse before a builder starts work on the site. Even then he would be lucky, but he does not see it in that light, feeling that he is being ill-used.

In important buildings the loss of time and consequently loss of money before building starts is an even more serious matter. A short time back we had the American invasion into the building world of England, and the secret of the success of that campaign was that no time was lost in preliminaries. Probably the building

owner did pay more for his bricks and mortar, but it is questionable whether he was a loser in the long run. The man who was the loser was the quantity surveyor, whose services were not required at all.

Is not this a warning, that as the tendency to hustle increases the quantity surveyor may be jostled out of the way? Is all the infinite toil which we give ourselves justified by the exigencies of the case?

After all we have to remember that "quantities" are but a means to an end. To this the old-fashioned surveyor may retort that quantities are as important as drawings, and that the building cannot well be erected without them, but in practice I fear that we shall find more and more frequently that buildings—and very important buildings, too—can be erected without quantities.

Surveyors have made one step of late years towards saving time in not taking the labours on stone. The reason for not so doing, viz. because builders do not price the labours, is a bad one, but the saving of time and labour is to the good. Another bad reason is opening the door to the incompetent man. In my opinion the taking of labours on stone, excepting in the case of most important buildings, should be abolished, simply and solely for the reason that it is spending more time and trouble on the work than the work and the remuneration for it justifies.

There is plenty of scope for further innovations in preparing quantities. First, I would suggest as suitable for alteration the carpenter and joiner's bill, which is out of all proportion in length to the other bills, and out of all proportion to the money value of the same.

Secondly, I would suggest the abolition of all items of very small money value. Please do not misunderstand

me, and think that I am arguing in favour of the engineer's quantities for a £100,000 contract on half a sheet of notepaper. But I do demur to pages of bill, the money value of the items on each page coming to a few shillings. I object to items the money value of which do not exceed the cost of lithographing the description. It is true that "many a mickle makes a muckle," but what does the "muckle" amount to? Not to an appreciable percentage on the contract sum.

Surely such items as skirtings, picture rails, &c., might be made to include their labours, and how many such labours there are.

Our aim in preparing a bill of quantities should be to give the contractors who are to tender therefrom everything they want in an accurate, clear, and concise form, so that they can readily affix their prices to the various items. I feel inclined to brush aside any other feature, especially the academic features of a bill of quantities.

In theory one should embody everything required to be done by the builder which is set forth or implied by the drawings, specification, and conditions of contract. A mischievous but very general custom is for the surveyor to embody copious extracts from the specification in his bills and yet render it necessary for the builder, if he wishes to be thoroughly posted up in all matters, to refer to the specification itself. My theory is that it is unwise and unnecessary for the surveyor to try to embody everything which is in the specification and conditions of contract, and that he does better by shortening his own work and practically compelling the builder to have recourse to the specification.

"The quantities are prepared for the convenience of contractors in framing their estimate." I am quoting

an accepted, and I may say official, dictum. Therefore why should not surveyors consult contractors in the matter of any changes which might advantageously be made.

How often we find the words "best," "proper," "approved," and the like, scattered through the bills. Surely the conditions of contract should cover all this ground and in most cases render the use of such terms superfluous.

Under the old system there was a special signification to the word "provisional" when attached to an item in the bills, and I find the word, or one tantamount thereto, in quantities under the new system. It seems to me that logically all items under the new system are provisional and the special signification has gone, like a good many other things, under the change from the old system to the new.

It is of no avail for the quantity surveyor to abuse and blame the architect for not allowing him sufficient time in which to do the work. The difficulties of the architect of late years have increased in many ways. He is called upon to do much more work than formerly, especially in preliminary arrangements, and it is by helping the architect that the surveyor can best serve his own ends. One of the best ways for a surveyor to help the architect is in the matter of writing the specification. A properly trained quantity surveyor ought to be able to write a better specification than an architect, everything else being equal, as the mathematicians say.

By the time the quantities are taken out the surveyor has mentally constructed the building in every detail. He has, or ought to have, solved all knotty points of construction. He knows what questions will arise in

the actual construction, and he ought in the specification to be able to make the way clear for the builder's foreman and the clerk of works, instead of leaving them to thresh out the point just before it arises in the course of the work. There is generally ample time for the quantity surveyor to write the specification between the time he issues the quantities and the acceptance of the tender, and during this period he should be able to answer any questions which the contractors may raise *à propos* of the quantities and specification.

This method of doing the work is also useful, as it serves as an excellent check on the quantities. If errors have arisen in the taking off or making up they should be detected, and there is an opportunity of putting matters right before the signing of the contract. It is almost as good as double entry in bookkeeping, as the work has to be reviewed from another standpoint. It would also help to raise the status of the quantity surveyor if it became a recognised custom for him to write the specification, while the architect would gladly be relieved of the task, and he would of course be able to see that everything he required was embodied therein. The incompetent man would not find it such an easy task as it looks to write a specification.

"But," says the young quantity surveyor, "are we not to be paid if we have to undertake this additional work? We already, according to your own showing, do too much for our pay, and now you propose to increase our work? If so, our remuneration ought to be increased." The question of remuneration is too delicate for me to attempt to handle, but in this particular connection, I would point out, the surveyor would be paid for writing the specification, as the arrangement would be made at the start. The architect would ask

what percentage would cover both quantities and specification, and the surveyor would fix his rate accordingly. Even if he got no higher rate than he had before he was burdened with this extra piece of work, he would be better off by securing the work than if it went into other hands, as undoubtedly it would. He would also be knitting closer the ties between himself and the architect.

This plan also strengthens the architect in being able to nominate his own surveyor instead of having a stranger thrust on him; a point of interest in itself and one it would not be difficult to enlarge upon, although I do not now purpose saying more upon the topic.

In considering the question of remuneration the surveyor must do something more than look for adequate pay for his work: he must also consider whether the building owner gets full value for the sum he pays for that work.

In order to get the lowest tenders on a satisfactory basis the building owner has to pay the surveyor's commission, lithography, and other expenses, and has also to bear the cost of the loss of time during which the quantity surveyor's work is being done. Nowadays building owners, whether they take the shape of individuals or committees, are generally wide awake to all these circumstances, and I say therefore it behoves the surveyor to see that he gives sufficient value for his services. If he will recognise this he will be the more likely to find himself busy rather than one of the unemployed.

The question is sometimes asked whether quantities enhance the cost of a building or not, and the answer, in my opinion, is that if the contractors tendering understand the quantities, and the quantities are properly pre-

pared in all respects *bien entendu*, the building owner will get a lower quotation (even allowing for all cost of fees, expenses, time, &c.) than he would otherwise do.

But if contractors do not understand quantities, then probably the cost of the building is enhanced; it is consequently not advisable to have quantities for small houses in districts where the builders do not understand quantities.

You may say that I have grumbled much, asked many questions and found fault with an existing state of affairs which in the main works very well, and you will ask what recommendations I have to offer. I will ask myself a question and proceed to answer it. "What do I want?" I want to see the incompetent man prevented from undertaking work for which he has no qualifications, I want to see surveyors protected in their profession as lawyers and medical practitioners are protected in theirs.

I want to see the day when, under the new system of making quantities form part of the contract, we all, surveyors, architects, builders, and building owners, are safeguarded as to our work, liabilities, &c., according to the law of the land, so that we may all be able to see clearly how we stand.

I want to set quantity surveyors thinking, to see if we cannot so amend our ways of doing our work as to be in harmony with the spirit of the day, chiefly to save time and labour, so that our reduced remuneration as compared with, say, thirty years ago shall be more in accord with the amount of expense incurred: to put it tersely, to justify our *raison d'être*.

Since writing these notes I have read once again the Paper entitled "Quantity Surveyors: their duties, rights and liabilities," read before The Institution in 1889 by

my father, and the discussion which followed. That Paper dealt chiefly with the then recently decided law case of *Priestley and Gurney v. Stone*, but it also touched on several other subjects. The discussion was especially illuminating for the reason that so many able and eminent men spoke and gave their views.

There are three points which particularly attracted my attention.

First. That the warning note of the incompetent man coming into the field under the new system was struck by a well-known contractor.

Secondly. That the speakers who advocated the new system, then in a decided minority, did not support their asseverations by any reasons.

Thirdly. That none of the speakers supported the suggestion of the writer of the Paper that a Joint Committee should be formed to try to put into shape the status of the quantity surveyor. Probably at that time the difficulties of forming such a committee were great, but to-day we have a Quantity Surveyors' Committee of The Institution, and I conclude by expressing the hope that that committee may at some time deal with some of the questions I have raised in this Paper, and put us all straight.

Referring once more to my epigraph—we must not let our souls slumber!

The SECRETARY read letters from Mr. G. CORDEROY (Fellow) and Mr. A. C. REMNANT (Fellow) expressing regret that they were unable to attend the Meeting.

Mr. H. T. STEWARD (Past-President) said it was with great pleasure that he rose to propose a vote of thanks to Mr. Hunt for his Paper, which he did

not hesitate to say, in words which had often been used before, would afford some food for thought.

He desired also to express his personal regret, in which he was sure all would share, that Mr. Hunt was unable to be present to read the Paper, and a hope that he would soon be restored to health.

The question whether quantities should or should not form part of the contract had been before The Institution on several previous occasions. Nearly 20 years ago the subject was discussed by Mr. Hunt's father in a Paper entitled "Quantity Surveyors ; their duties, rights, and liabilities." At that time, as had been pointed out, surveyors were much exercised with the case of *Priestley v. Stone*. In that discussion much difference of opinion was expressed, the general feeling then being against the "new system," as Mr. Hunt now called it for the sake of brevity.

But since that time a good deal of water had run under London Bridge and a good deal of experience of the new system had been gained, and surveyors were now in a better position to judge of its advantages and disadvantages.

The person entitled to the first consideration was the building owner, without whom neither architect, builder, or surveyor would be required. The new system could not, he believed, make any difference to the architect. To the builder it should not make any difference, and frequently afforded him protection ; at most it could but turn the contract into a contract under a schedule. To the surveyor it should make no difference directly, though it was suggested in the Paper that it would indirectly foster incompetent men, but with that he was not entirely disposed to agree. Such things generally found their own true level, and he did not believe

that any incompetent man would ever do a large business.

It was a fact, he regretted to say, that there were incompetent men in the profession 30 or 40 years ago, but he did not know that their numbers had increased.

After all, the main person to be considered was the building owner, and if the new system had been found to be in his interest there was not much likelihood of reverting to the old. His own experience was that making the quantities part of the contract had been beneficial to the building owner and to everybody else. He had had many large works to settle under the new system, and he did not find the quantities were disturbed in one case in twenty.

One remark of Mr. Hunt's struck him very much. Were surveyors in danger of taking themselves too seriously? He was almost disposed to admit that this was rather the modern tendency. He would refer to the Paper of Mr. Josiah Hunt, than whom there was never a more competent man nor one more capable of speaking by right of experience.

In his reply to the discussion on that Paper he said: "The origin of bills of quantities must be thoroughly understood before any other question concerning them could be usefully considered. Quantity surveyors had always been servants, and would always continue to be so. Forty years ago architects rarely interfered with quantities; on special occasions they appointed a surveyor to represent them, or rather their employers; but this surveyor did not act alone, he always worked in conjunction with a surveyor nominated by the builders. Surveyors had been the servants of the builders, but now were the servants of the architects." That was an expression of opinion

by one entitled to the greatest respect from the younger members of the profession, who he was inclined to think might possibly be taking themselves too seriously.

The Paper contained a comparison between surveyors now and those of 50 years ago. He was sorry to have to admit that he had had nearly that length of experience, and no doubt during those years things had altered much, but what struck him most was the enormous increase in the number of his professional brethren, which had gone on by more than leaps and bounds. Their numbers were now enormous, and to this no doubt was due the competition which had taken place of late, aggravated probably by the bad times through which they had all been passing in connection with building. A wish had been expressed by Mr. Hunt that a surveyor might be protected in his profession as were legal and medical men, but he thought surveyors might dismiss that idea as Utopian, and must rest content, as their fathers were, to give good service to their employers, whoever they might be.

Of one thing he felt certain—and the same view was expressed to him by an eminent quantity surveyor many years ago when discussing this subject—that as long as there were building contracts, so long would surveyors, or experts in the form of surveyors, be required; and he would say to the younger Members of The Institution, he was sure that so long as men were careful to build up an honourable reputation for care in the detail of their work, so long would those men find enough to keep themselves reasonably employed.

So many questions had been asked by Mr. Hunt that he could not allude to them all, but he had made notes of a few. The questions of law he would pass over and leave to others more competent to deal with them.

If bills of quantities were to be part of the contract, there was no doubt in his own mind that the dimensions should be at the service of the builder's surveyor equally with the building owner's surveyor. It seemed almost unnecessary to mention the next point on which he made a note, namely, that the bill of quantities should always be examined before the contract was signed. He ventured to think that this was always done, for then was the opportunity for rectifying errors, and when an error was discovered the builder had the opportunity of amending it or retiring.

If drawings were not sufficiently completed so as to admit of proper quantities being prepared, a schedule of prices with approximate quantities should be adopted. A suggestion was made by Mr. Hunt for saving time in preparing bills of quantities, and if such was confined to eliminating the minor details and excrescences (he did not know what else to call them) which had grown up in bills of quantities within his memory, he should cordially concur. Builders knew exactly what the work was worth, and did not want many of those minor details, but he must raise his voice in protest, as he had done before, against the notion of not taking the labours on stone. He was certain this would raise all kinds of difficulties, would not be to the building owner's advantage, and would not be approved by the builders. He had often given his reasons for this in detail, and was prepared to do so again if necessary.

He quite concurred in Mr. Hunt's view that with proper bills of quantities a lower tender was obtained than without them, but there was no use whatever in sending bills of quantities to a builder who did not understand them.

Mr. A. G. CROSS (Fellow) said he had much pleasure in heartily seconding the vote of thanks to Mr. Hunt for his Paper.

He was glad that Mr. Hunt had referred to the Paper which had been read before The Institution many years ago by his father, for, to his mind, the parts of the *Transactions* containing the report of that Paper and the discussion thereon constituted a most valuable addition to the literature dealing with the subject.

In cases where the quantities did not form part of the contract, Mr. Hunt said that the surveyor who adjusted the variations should deal only with those items for which a written order could be produced. In the form of contract issued by the Royal Institute of British Architects an authorised variation was clearly defined in Clauses 5 and 12, and embraced considerably more than that. Mr. Hunt also inquired (having in mind no doubt the clause under which quantity surveyors were employed to adjust variations under the contract) who was to decide whether the measurements a surveyor would take, in arriving at the sum which is to be added to or deducted from the contract, were kept within reasonable limits. He should be glad to hear opinions expressed by older Members of The Institution on that point.

It seemed to him that the quantity surveyor whose name was inserted in the contract as the one by whom the duty should be performed, with the concurrence of the employer and the builder, became an arbiter, and therefore the best judge of the amount of detail into which it was necessary to go to arrive at a decision.

He agreed with Mr. Hunt that the Scotch system, as he termed it, was to be preferred to a system of making the quantities part of the contract, but he did not think that was likely to become general until quantity sur-

veyors could agree upon a uniform method of measurement. The system under which measurers practised in Scotland was much less chaotic than that which prevailed in London. The Glasgow Institute, and he believed those of Edinburgh, Aberdeen, and Dundee, had years ago published a table to be adopted for the measurement of artificer's work, and should any difference arise, a reference to such a table would solve any difficulty.

Two at least of those institutes, and he believed the whole four of them, had published scales of charges, and in that particular also he considered they were in advance of London. A Member of The Institution, a well-known quantity surveyor, advocated a year or so ago the publication by The Institution of a model Bill. If that Bill were to embody all the various items of materials and labour with which quantity surveyors were called upon to deal, the document in question would indeed be comprehensive. He was afraid this was not possible, but he hoped that a pamphlet such as the Scottish one to which he had referred would be in existence before very long.

He quite agreed with Mr. Hunt that a quantity surveyor was best fitted to write a specification, but as fees had been reduced to almost vanishing point, he would hardly suggest that they should be called upon to perform that extra service without extra payment.

In the schedule of charges issued by the Royal Institute of British Architects the preparation of the specification was clearly shown as one of the services which the architect should render, and payment for this was included in his commission. It was unreasonable therefore to suggest that the building owner should pay the quantity surveyor in addition. Should the system

become general it was the architect to whom we must look for payment, and any reform, the effect of which would reduce their income would, he imagined, meet with little support from the architects themselves.

In his concluding paragraph Mr. Hunt expressed the hope that some remedy might be found for existing evils, and he was sure all would share that hope. He quite agreed with Mr. Steward that it was Utopian to hope that for many years, if ever, the quantity surveyor would be protected in the sense in which a doctor or lawyer was protected. The Incorporated Law Society possessed power to prosecute anyone posing as a solicitor without being one, but the infliction of such drastic punishment was unfortunately denied to surveyors. At the same time he believed a great deal could be effected by a combination among members of the profession. The improvement of the conditions under which a profession was practised could only be obtained by members of that profession, and until some combination were established he did not believe that much could be done.

Mr. JOHN MURRAY, F.R.I.B.A. (Visitor) said he was glad to have the opportunity of expressing his thanks to Mr. Hunt for the way in which he had dealt with this important subject. Having had some experience both in architectural work and in quantity surveying he fully recognised the difficulties of both sides, and the result of his experience was that he could not agree that the quantities should be made part of the contract. The system opened up all kinds of difficulties and troubles for everybody concerned in the work. The weak point in the whole system seemed to him to be the fact that there was no privity of contract between the surveyor and the builder; if that could be

secured in some way he thought it would meet many of the difficulties under which surveyors now laboured. The chief difficulty, apparently, from Mr. Hunt's point of view was the fact that more or less incompetent men might in some cases be paid full fees for doing the work ; but he thought the real mischief arose from their willingness to undertake the work at a price so low as to make it impossible to do it thoroughly. He had known cases where work could not be properly done because it was not properly paid for.

The quantity surveyor's work was a very important item in the construction of every building, and ought to be paid for fairly.

In his opinion it was essential, if the work were to be thoroughly done, that all labours should be taken, and he agreed with a previous speaker that if this were done the contract would be lower than it would otherwise be. He took it that the chief aim of the architect and the surveyor was to get the building well executed at the most reasonable price, in all cases safeguarding the building owner's interests. He believed that the ideal system would be to have quantities properly taken off by a competent surveyor, and not made part of the contract so long as it was possible to arrange some contract between the surveyor and the builder.

That point had often been raised and argued in past years ; but he did not think it had ever been properly solved. The builder tendered on the quantities prepared by the surveyor, and he thought the surveyor ought, in some way, to guarantee that those quantities were correct. That he felt was the chief point.

Mr. WILLIAM WOODWARD (Fellow) desired to add his own thanks to Mr. Hunt, although he differed almost

entirely from the views laid down in the Paper. He had, however, no hesitation in saying that such a Paper formed a valuable addition to those read before The Institution and the Royal Institute of British Architects on the same subject.

It was not clear to him why Mr. Hunt called the system he referred to the "new system." He had not only known it but had carried it into effect, by making the quantities part of the contract, for at least 40 years. If he might be permitted to refer to a personal matter, he might say that he had the pleasure, which came to some architects once in their life, of building a house for himself. He had the quantities taken out, and made those quantities part of the contract, for the simple reason that he had no desire, and would not permit a client who had such a desire, to get materials for his building for which he had not paid, nor did he intend that a builder should be paid for work he had never executed because, perhaps, of a clerical error in the office of the quantity surveyor.

The idea seemed to run through Mr Hunt's Paper that incompetent surveyors were likely to be a menace to the profession, but his own experience was that such incompetent men were very few.

He quite agreed with Mr. Steward that it should not, and he believed did not, make any difference whatever to the quantity surveyor whether the quantities were part of the contract or not. He was sure that quantity surveyors as a rule did their work properly; but even supposing they did not, and a clerical error were made which represented a large sum of money, if the quantities were not part of the contract, was it right that the money to make good that deficiency should be paid by the quantity surveyor himself? Was it reasonable that

because a clerical error or a little slip occurred on the part of the quantity surveyor, who perhaps got £200 or £300 for his work, he should be liable to find, perhaps, £1,000 or £2,000 to make good the deficiency? There ought to be no desire on the part of the builder to take advantage of the client for an error in the quantities or for the client to take advantage of the builder for a similar error.

During the last 30 years he had consistently and persistently made the quantities part of the contract. He had not heard of any difficulties resulting from that method, and he intended strictly to adhere to it to the end of his professional career. He fully endorsed all that Mr. Steward had said, but he would like to make one or two brief observations on some points of detail.

With regard to documents being referred to in the contract, he regarded all abstracts, dimensions, and such documents as necessary parts of the contract which could not be dissociated from it. He had always maintained that if a builder desired he should be supplied with a complete copy of all the dimensions, and he saw no reason why he should not be entitled to them if he paid for the cost of the copy.

He fully agreed, of course, that bills of quantities should be looked through and carefully read over before the contract was signed, but in dealing with variations he would not, whether it was to the builder's advantage or disadvantage, permit the prices to be interfered with. A clerical error in moneying out was a responsibility which must rest on the builder himself. If such errors were once allowed to be corrected it would open the door to considerable danger. The prices must be examined to see that they were correct, and must then be adhered to.

He agreed that labours on stonework should be

taken out, for although they were not moneyed out by the builder, it gave him a good opportunity of knowing the nature of the work.

The subject of the remuneration of surveyors was a painful one, for it was humiliating to think that quantity surveyors themselves should reduce their remuneration in the way they had. There was no reason for it, and if quantity surveyors 30 years ago had stood out firmly for their proper charges as had the architects for theirs, the alarming prices of which one sometimes heard for which quantity surveyors were willing to perform their work would not have been possible. In a word, he was entirely in favour of quantities being made part of the contract, and nothing in the Paper had led him to alter his opinion.

Mr. ALFRED KING (Fellow) said he cordially agreed with Mr. Woodward in advocating the principle of making the quantities form part of the contract. He had adopted the system for 25 years, and in settling up contracts at completion he had never found that any difficulty arose.

The London contractor was generally an eminently capable man and one thoroughly able to take care of himself. So soon as he got the bill of quantities in his hands, and had satisfied himself who the quantity surveyor was, there was no great difficulty in arriving at a satisfactory figure at which to send in his tender.

A question of a very pertinent nature had been raised by a previous speaker as to the position of the building owner, and he could not help thinking that the author of the Paper had hardly paid so much attention to the building owner's point of view as he might have done. He would submit that the building owner was

the one person of primary importance who set everything in motion, and it was the duty of architects and quantity surveyors to do their duty in studying his interests. If a quantity surveyor gave full value for his money he would always find full work to do. To his mind it was impossible to carry out work on any large scale unless the quantity surveyor was a man of practical experience. It was a fine art in itself, and it required a man of considerable training and experience to deal with matters that arose under building contracts, and so long as building contracts were put out to tender so long would quantities be required.

Mr. E. J. BURR (Fellow) said he was distinctly of opinion that the quantities should form part of the contract, for he considered the system was calculated to ensure strict equity as between the parties. Under the old system it was possible that if a quantity surveyor made a serious error the builder might have to suffer for it, as was no doubt done in many cases. Under the new system the builder got a better chance, and where it was possible to repair an error it seemed to him right that there should be some means of doing so.

He agreed with a previous speaker that a building owner should only expect to get what was fair, and could not honestly wish that any part of the work should be done for nothing. That was true, but if on the other hand one was dealing with a committee of a public authority or with an official department the case was somewhat different, because a lump sum of money was voted for which the work had to be done, and not a penny more must be spent. In those circumstances the matter was more difficult, and he could quite understand and enter into the feelings of the architect who resisted

any claims put forward by the builder who had underestimated the cost of the work, and perhaps in such a case there might be something in favour of the old system.

He remembered one case of a small contract where he had found after the quantities had been examined (which he always liked to do before the contract was signed) an error of about £200 in the brickwork as against the builders, a firm not to be suspected for a moment of having made the error in order to get the job. Nevertheless as a matter of fact they got the work through that error, and they were willing to lose the £200 in order to retain the contract, but even if the addition of the £200 would still have made them the lowest he would not have admitted that they were entitled to the money.

He did not think any error in moneying out should be put right after the contract was signed, although it might be made right if it were found out beforehand.

With regard to labours on stone, he thought it would be well if builders who did not price labours on stone could be made to price them out before the contract was signed. It would then be easy to price variations by pricing the labours at so much per cent. of the total amount for the stone in block.

Take the case of a common boundary wall which had been taken out of the contract. If that were to be deducted at the same rate as the prices of the whole of the much more expensively worked stone it would be hard on the builder, and if, on the other hand, it had been priced as elaborate work it would be equally hard on the owner. He thought therefore that the price of the labours on stone should in every case be put in. He remembered that when he was a young man a job

came into the office, and the surveyor found himself unable to take out the labour on the stone and had to call in a fellow surveyor to do it for him. He (the speaker) then and there made up his mind that he would not rest until he learned how to take out the labour on stone.

Mr. S. A. STANGER (Fellow) said that among the questions raised in Mr. Hunt's able Paper was that of taking the labours on stone. A method which he believed was more highly appreciated by builders than that of taking all labours was that of providing, with the bill of quantities, descriptive drawings of elevations for use in the quarries or wherever the stone was worked, which he firmly believed was really of more practical value to the builder and stone merchant in preparing the estimate than to give details of labours on the stone.

Much had been said in the discussion as to which system was best for the building owner—the old or the new. Nearly all public bodies when they advertised now said distinctly that quantities would not form part of the contract, and it appeared to him likely that they had taken legal advice on the point and had found that the most satisfactory and business-like plan was to employ a man of high repute and to insist that his quantities must be accurate. If a mistake were made he must settle the difference with the builder, but hold them free from any liability for inaccuracy in the quantities.

He must admit that some quantity surveyors were prone to spend more time and trouble on trifling matters than the value of the items warranted. That was a by no

means an unimportant phase of the subject which ought to be considered.

He did not share the somewhat gloomy view expressed by the writer of the Paper as to the prospects of the quantity surveyor's profession. He agreed rather with previous speakers that as commercial competition became greater so the demand for quantity surveyors would be greater still.

In the case of the important buildings in London to which reference had been made, the arrangement of a percentage on prime cost would, he believed, be found an expensive and, from a business point of view, a most unsatisfactory system, inasmuch as there would be no incentive to the contractor to secure economy in carrying out the work.

Mr. J. HOWARD COLLS (Visitor) said that speaking as a builder he ventured to express an opinion that builders in London at any rate were quite content to accept the quantities of leading surveyors, but he did not think there was any keen desire on their part that they should be made part of the contract.

He thought on the whole that if a builder had confidence in the surveyor, and knew he did his work well, he would accept the quantity surveyors as the arbiters or measurers for the job he had to estimate for, and would be quite willing to run the risk of errors. As a rule a leading quantity surveyor was absolutely accurate; the art had become so well defined.

But there were occasions where it was most necessary for the builder to ask that the quantities be part of the contract. That was particularly the case where architects indulged in taking off the quantities themselves

He knew of nothing worse than architects' quantities, except perhaps quantity surveyors' architecture.

He remembered tendering a good many years ago for a church under a well-known architect, his own being the lowest tender. The quantity surveyor's name was utterly unknown to him, and he could see by the way the quantities were prepared that it was the work of a novice, but he did not know in the least whether they were full or the reverse. Therefore he told the architect that he was perfectly willing to go on with the work provided the quantities were made part of the contract. After a good deal of trouble the building owner agreed to this.

Before the work was above the ground it was discovered that there was a very large error in respect of excavation and the lower portion of the brickwork. He at once consulted a well-known surveyor, who discovered errors of no less than £2,000. The work could of course have been proceeded with and the errors brought forward at the end of the job. That was perhaps what some would have done, but he went to the architect and pointed out to him what had occurred, and that then was the time to see how matters stood.

The building owner was naturally very angry, and things were anything but pleasant for everybody concerned. That case showed the great danger to a building owner from employing an incompetent surveyor.

He did think that the labours on stone should be taken, and he had often expressed that view before. It should be remembered that the quantity surveyor ought to be able to produce on paper such a bill of quantities that going to look at the drawings was an unnecessary luxury. That was the *beau ideal* of quantities. It

should not be necessary to go to an architect's office to see the drawings, except to get a general idea.

One other subject to which he might be permitted to refer was the miserable remuneration which quantity surveyors often got for most important and responsible work. He had seen the competition that went on amongst quantity surveyors, who were expected to take out quantities for large buildings for an absolutely absurd remuneration. If he had been on a committee responsible for the work he should regard it as absolutely immoral to allow a quantity surveyor to work at such a rate as, for instance, 12s. 6d. per cent. for an important building. The work could not be properly done at such a price. He thought public bodies had no right to set such an example, and it seemed to him a great fault in the system that important work should be produced at such inadequate remuneration.

The PRESIDENT, in asking the Meeting to join in a hearty vote of thanks to Mr. Hunt for his Paper, said he was sure he had the wishes of all present with him in expressing a hope that Mr. Hunt would shortly be among them again well and hearty.

In his early days a country architect was invariably his own quantity surveyor, and the quantities always formed part of the contract, and even to-day where the quantities were taken out by an independant surveryor he should have no hesitation whatever in making them part of the contract.

The question was what was best for all parties. It was not a question of advantage either to the building owner or the builder. The surveyor should look at what was right and proper between the two—the one who did the work and the other who paid for it.

If the builder made a mistake in moneying out, say 100 yards at 1s. put down at 8s. 4d., the man who made such a mistake should certainly abide by it. It was a misfortune, but he must abide by it; but if there were found on measuring up to be, say, 150 yards, he would allow the proper price for the extra 50 yards. So with deductions. He remembered a case where a tenderer had come hastily down to the office to say he had made a mistake of so much, and to ask what was to be done. His practice had always been to say, whether the mistake were the cause of the contractor's success or not, "You must abide by your figure or else retire." He did not believe in false sympathy being extended to such mistakes.

He believed that a surveyor's duties were necessary whether the work were large or small, and it was for the building owner to obtain the services that would best answer his purpose. He did not think it right that the surveyor should be altogether the victim of his own miscalculation. Why should an unfortunate young fellow who had done his best, but had still made a serious mistake, lose perhaps a couple of thousand pounds on a job which at best brought him in £200 or £300? He believed in equity, and that work should be paid for if done *bona fide*.

The vote of thanks having been put and carried unanimously the Meeting then adjourned.

THE AGRICULTURAL EDUCATION OF THE LAND SURVEYOR.

BY K. J. J. MACKENZIE (ASSOCIATE),
Lecturer in Agriculture, Department of Agriculture,
Cambridge University.

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION held on Monday, April 27th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair,

In the first volume of the *Transactions* of The Surveyors' Institution there is a Paper, read by the late Mr. William Sturge on December 7th, 1868, entitled "The Education of the Surveyor," and in preparing the contribution which I am about to read I have taken advantage of some of the facts and arguments so ably set forth in that Paper.

Mr. Sturge prefaced his observations by claiming that "Education," with which his Paper dealt, was one of the main objects, if not the principal object, of The Institution, which aimed at promoting the interests and raising the character and position of the profession. I fully believe that practical experience has proved Mr. Sturge's words to be true, and writing thirty-nine

years after his Paper was read, I can find no more potent argument in favour of reintroducing the subject. Mr. Sturge found it necessary to explain that the branches of the surveyor's profession were so many, and the training necessary to qualify as expert in one or other of them was so varied, that he felt it well to confine himself to one branch only, and he took for his subject that of the land surveyor. In an age of specialists I find it incumbent on me still further to restrict myself, for I have knowledge of only one—an important one—of the many subjects in which the land surveyor is, or at any rate should be, instructed.

Mr. Sturge in his Paper described an educational scheme, and suggested improvements in the preliminary schooling, a certain amount of special work at accounts, and the usual office training. With none of these matters do I propose to deal, and indeed I do not feel myself competent to do so. When, however, he suggests that a course of scientific training at a college should be followed by two years' practical work on a farm, it is quite clear that the college which Mr. Sturge had in his mind was very different from the best of the modern institutions of to-day. If tradition does not mislead me, he even misjudged those of forty years ago. Supposing, however, that he was right as referring to the times of which he wrote, I submit that his suggestion is wrong as regards the present, and wrong on two grounds, first, that the value of time in these days is too great to allow of so long a course in the case of a student possessed of no more than average means, and secondly that the syllabus at a properly conducted college should, and often does, contain a course of study which enables a man to learn agriculture without putting aside two years of his life for "practical" work.

It may be well, since so much misconception exists on the point, to say that by the word "agriculture," I mean "husbandry"; my contention being that farming on the business side is a matter that can be taught at a college or university. I may say at once that I do not think that real agriculture is taught when notes relating to the structural character of grasses or the anatomical peculiarities of insect pests are dictated to students, and I know that the agriculturist has plenty to talk about without discussing at length the results of experiments with artificial manures. Such matters belong to science pure and simple. The incompetent teacher might be eradicated if the idea that the Agricultural College only exists to give a smattering of scientific knowledge were less prevalent among the agricultural public. Men of sound practical knowledge could do much good by refusing to sanction incompetent teaching of husbandry, by insisting that their sons should be taught practice, and seeing that no second hand résumé of other people's "research" be allowed to replace such instruction.

I hope I may not be understood to belittle in any way sound scientific teaching, for I hold as strongly as anybody can that such knowledge properly taught is indispensable to members of a profession in which a thorough knowledge of agriculture is important. I will even go further and say, that, while teaching farming, the lecturer would be unworthy of his position if he did not help his pupils to make use of, and to apply, their scientific knowledge. Many students will, if they are allowed to do so, divide their minds up into compartments, "pigeon-holing" each subject by itself in their brains. It is imperative that the teacher should realise this, and so conduct his training that botany, chemistry,

and the other kindred sciences may illuminate but not replace or distort his own subject, husbandry.

I will now venture to put forward my own view, founded on experience, of the way in which agriculture, as it is called in the College prospectus, should be taught if the young land surveyor is to do without his two years with a practical farmer. The course of lectures to be given might be set out in a detailed syllabus under the following among other headings:—

1. Soils and improvement of soils.
2. Manual and horse labour.
3. Systems of cropping and crops.
4. Grassland and haymaking.
5. Live stock, management, feeding, breeding, breeds, selection, etc., etc.
6. Dairy husbandry.
7. Capital—expenditure, stocking, and estimating expenditure and profits.

But such a course would be far from sufficient without instruction on the land. Regular and continuous farm classes and demonstrations must be given in the field. Though no syllabus can describe such teaching, I lay great stress upon it, for without farm classes the gist of the matter is not really grasped; implements and live stock are considered as text book pictures, while cultivations and growing crops remain unknown quantities. But worst of all, the observation and the powers of deduction are not actually trained or improved.

Starting with the basis of all our material wealth, the soil itself must be dealt with, and the professor of agriculture must exercise some ingenuity in fixing the attention of his class on so mean a matter as mere earth. He generally finds himself confronted by a body of

students whose only object is to become specialists, and who, in ninety cases out of every hundred, regard all matters other than live stock as unworthy of their attention. It is unfortunate that a perhaps natural ambition to possess a 1,000 guinea bull does not necessarily endow the student with a desire for that knowledge which will enable him to grow its food. However, when once this tendency is recognised, it is by no means impossible to inculcate the truth that, before prize-winning stock is produced, the land upon which it depends for nutriment must be studied and its peculiarities mastered.

Having got his students interested, a teacher should, without encroaching on chemistry or soil physics, deal directly with those phenomena which must be present before the soil can be looked upon as the grazing ground of the farm plant or crop. He should specify salient points which allow of the speedy recognition of clay and sand; describe how, if a so-called pure clay is presumably rich in plant food, it will require four instead of two horses to plough it, and the expense of working will be still further augmented by the fact that its sticky nature makes it necessary to keep the teams at home, eating their heads off in the stable, when other soils are fit to work.

Sand is known to all, but students must nevertheless learn how, if easy to work it is costly to feed; how it blows; how, unless properly situated, its poverty as a reservoir may ruin anyone, however skilled or energetic he may be. The course of lectures should also embrace all material matters concerning loams, fen, chalk soils, and their various derivatives. The notes taken at them should give such information as would allow of a man knowing roughly what to expect when starting on a particular soil with a view to cultivating it for a liveli-

hood. It is not enough to have told him, for instance, that a "steely" soil is one that runs together on top in spring, for this knowledge would not make him realise that with such land, bad tillage will allow of a surface pan being formed which may smother a large percentage of tiny plantlets, thereby obliging him to resow the whole crop, or at best limiting his supply of swedes for winter beef production.

A serious attempt should be made to give a systematic account of the economic merits or demerits of different classes of soil, and to indicate definite points that assist in the recognition of those soils classed as gravels as "sharp" or as "hungry," &c., trying to bring some sort of orderly arrangement into the minds of those who will some day have to be depended upon to value or manage the land. The vagueness of the thoroughly practical man, the general chaos of nomenclature in text books, does, it must be admitted, make the treatment of such matters extremely difficult. But much can be done if only the teacher will endeavour to observe things for himself on the farm, and forget that he himself is only capable of recognising many points by means of that faculty, which is described as instinct, which instinct is absent in his pupil who is there, however, to be trained to acquire the faculty. An instructor's aim must be to lay a foundation on which the undeveloped intellect may be taught to reason and deduce facts from simple points which might lie for years unnoticed by one who has not had the advantage of a theoretical training. Points given in the lecture room should, so far as the circumstances of the district allow, be demonstrated upon the land. Only an optimistic, not to say a foolish, man hopes to do more than help his students to acquire and apply knowledge.

Though it may seem a little matter to those who have learnt from many years' experience, I feel confident that useful work has been done when the "brash" on the surface of a field first suggests to the beginner's mind the advisability of using the humble spade to find out how much or how little soil there is in which he may hope to grow a wage-earning crop.

"The indications of fertility," Professor Wrightson tells us "are those features which appeal to the un-assisted senses, and which point out to the skilled observer the character of the soil." I believe, however, that the professor, himself master of the art of teaching practical agriculture, would agree with me when I say that the senses without education will take a very long time to become skilled. It is poor criticism, if true, to say that lectures and hints given at farm classes can do little in the way of practical teaching, compared with the vast amount that can only be learnt in the school of experience. Every practical man knows so well the difference between the well-grown hedge on a fertile loam and the strong thorn bush on a sterile clay, and has so long been accustomed to discriminate between the firm springy tread of a rich pasture and the harsh feeling under foot of a poor sheep run, that I am diffident about referring to them at such a meeting as this. To point out the difference between a high well-grown elm and a gnarled stunted oak, however simple it may sound is, when properly done, a first step towards making the mind of the beginner gather knowledge; and every one engaged in practical teaching will be able to testify how much can come from such insignificant beginnings.

To continue the consideration of the suggested syllabus, questions of how and why the soil has to be

improved may next be dealt with. Starting with permanent improvements, the teacher should give an accurate, descriptive, and critical account of drainage, warping, irrigation, and other major operations, most of which knowledge will be outside the experience of the general farmer, but without which no course in applied agriculture can be in any sense complete. Using the farm as his laboratory, the instructor may illustrate many of these improvements.

The lecturer in surveying must teach the theory and practice of levels and contour lines, but it is for the agriculturist to look for spots where indications of wetness may be found, and to deal in the field itself with the difficulties of laying out a drainage system. Where no draining is being done on the college farm, he must show and criticise the arrangements of existing drains, and, if possible, point out in the neighbourhood some actual drainage operations where the manual work may be seen and discussed and its difficulties described. The possible cost and the consideration of circumstances which tend to increase or diminish expenditure in connection with these and all other agricultural operations are matters which may be treated in the lecture hall. It is only reasonable to expect that a teacher, trained in the ways of estimators and having time at his disposal for the study of such matters, should be able to give more rapid and possibly more efficient instruction to students on questions of finance than can be acquired by the average pupil in the course of his two or three years' experience on a farm. The farmer is very often vague in his estimate of what farming operations cost, and if he is the only mentor for two whole years, the financial information which the pupil can acquire will not in many cases be very definite.

Instruction in the temporary improvement of soils will follow on those improvements spoken of as "permanent."

Tillage is a matter requiring the teacher's most careful attention. All intimately acquainted with practical farming realise that each field requires understanding before one can definitely decide how it should best be worked under given circumstances. I have, however, no hesitation in saying that a boy who has been well grounded in the principles will very much sooner learn how to work any particular farm, and will save himself money as well as time while acquiring practical knowledge. Think for a moment of the complicated conditions that exist in the tilth-getting process, of the long furrow slice turned after the stubble has been cleaned, and of the six or seven inches of beautiful mellow "crumb" with fine seed-bed on top required before the turnip seed goes in. At a farm class attention must be drawn to the work being done by the plough, and questions must be put in the field to stimulate the exercise of judgment as to the conditions of the soil which allow of or suggest the use of this or that implement, and whether harrow or roll is wanted.

All these points will be better realised if, in the lecture theatre, a descriptive account has been given of what is happening to the particles and clods under the surface when the implements pass through the soil. Though no good teacher is ever tired of making students use stick and foot, both toe and heel, to ascertain the condition of a breadth of fallow or other worked land, still he must, if he hopes for success, be in addition prepared to say why a "hover" or "hollow" soil is bad, and explain how putting a roller over a field before the dew is off is an act of indiscretion which may cost half the mangel crop.

Manures and manuring treated purely from the farmer's point of view are very important matters. The chemist has certainly plenty to do, but the student must learn to manage and apply farmyard manure, and to be generally acquainted with the proper management of artificials. I have had considerable experience with farmers' sons and with farm pupils coming to me after a more or less lengthy apprenticeship, and though I have often tested them I have never yet met one who knew, without further teaching, how to estimate whether dung was being applied properly as regards method and the amount ordered to be dressed, nor have I been able to find one such student who knew how sacks of artificials should be arranged about a field, or what faults must be guarded against when the men were sowing the same. The ignorance of students who have been under untrained though thoroughly practical farmers is so marked that I have sought an explanation, and I have come to the conclusion that it is to be accounted for by the fact that a man who has acquired knowledge by experience is so accustomed to "knowing," that it is almost impossible for him to really grasp the entirely uninformed state of mind of his pupil, and so he fails to teach what seems to him to be mere well-known fact.

When dealing with the produce of the soil, crops and systems of cropping must be considered, and if not already treated of, labour on the farm demands attention and students must be taught by actual demonstrations how typical farm crops are grown, care being taken to exercise the faculty of looking ahead. As much time as can be spared in the field should be devoted to noticing how the farm hands do their work, attention being drawn to imperfections and the results likely to arise from carelessness, as well as to indications that

crops are fit to hand or horse-shoe, harrow, roll, or harvest. The important point is that the members of a farm class should be always observing and learning to think, so that they may shortly be able to act for themselves.

But necessary as all this undoubtedly is, it is not enough. There is still much to be done indoors. The student must understand why things are done in one way in one district, and why altered conditions make a quite different practice successful in another locality. I have never been tired of impressing upon my students the well-worn adage of learning farming by looking over the hedge, while telling them to realise that circumstances alter cases. I have always tried to impress upon them, in my endeavour to make them up-to-date as well as successful, the advice: "Go into a district and spend any reasonable time you like in learning the accredited practice of your neighbours. Then, when you are master of local custom, but not a day earlier, introduce any improvement that sound judgment indicates."

"Rotations" or "systems of cropping" will be found a subject rich in educational possibilities to him who wishes to teach practice. He may leave to the botanist his botanical reasons and let the chemist make such deductions as his present great and rapidly increasing knowledge will allow, but he should put the matter before students from a farmer's point of view alone, and in this way, I believe, very much may be taught. For instance, the following systems of rotation—

A.	B.	C.
Roots	Roots	Roots
Barley	Barley	Barley
Seeds	Seeds	Seeds
Wheat	Wheat	Seeds
	Barley	Oats

—are often found in practice, and they suggest much. The teacher should tell his students the various conditions which allow of substituting A for B or C, or B for C, mentioning soil, climate, “heart,” and cleanliness, and showing why such matters are of importance. Having given the data, he may ask them to estimate which of the three should be used where economy in manual labour is imperative. They may be treated from the point of view of live-stock or monetary return per acre, and if to these be added many other rotations commonly found in practice, and if these again be treated with common farm sense, I feel sure many useful hours may be spent by the men listening to those lectures at which many of the uninstructed are inclined to scoff.

The fear of exhausting the kind patience of my listeners must prevent my speaking on many subjects, but having paid particular attention to the matter of live-stock, I will venture to intrude upon your time even a little further while I speak of it, trusting that the importance of the matter may be my excuse for doing so. I know no subject more subtle, more difficult to teach, nor more often assumed to be attainable only by the experience of years. It is certainly one which imperatively demands a very thorough treatment both by word of mouth and by illustration in the classroom, as well as by actual demonstration on the grass and in the stall. Few matters are more hopeless for a beginner to try to learn from a book, and little is picked up in the wanderings of a farm pupil on the land, unless systematic instruction has led the novice to know what to look for. Take the instance of “bloom” upon a lamb. Pages might be read without knowing what it means; to my own knowledge boys have spent their

lives among sheep without noticing its absence or appreciating its beauties. Yet ten minutes' talk in lecture with some half-dozen demonstrations in the open on the animals themselves will enable an earnest student to be as certain of its existence as he is of the presence of the sheep themselves between the hurdles.

Some youths are, of course, naturally quicker and more observant than others. Nine years spent in closely observing the agricultural student convinces me that there is an agricultural "feeling" or "temperament" just as there is such an individuality in music or art. This, in the case of men preparing for the position of land surveyor, is an extra reason for skilled training. A man often learns his surveying and building construction or book-keeping and office work without apparent effort of any sort, and yet only those of us who have had to do it can tell the labour required to force a knowledge of husbandry into a passive resisting brain.

Take another instance, the matter of feeding for beef. A student may have "rations" and "albuminoid ratios" at his fingers' tips, but find them of little help when standing before a row of bullocks on a weekly visit to the "lodges" of a farm in hand. Those who pride themselves on being "old-fashioned" say that the practical way to learn is to become, for a more or less lengthy period, an agricultural labourer, striving to emulate some successful cowman. They contend that only manual labour can give a knowledge of stock tending. Possibly there may be something to say for these views but, be it the most practical method or not, there is simply not time for it in these days of close competition.

I hold that a competent professor should be able to

take his students among the animals, draw attention to their attitude, the feel of their hides, the appearance of the very droppings, and all other important matters, and at the same time to give such notes in the lecture hall that one hour's teaching from him will be worth ten hours' work along with John Hodge in the cow-byre. Delightful as was the pleasant monotony in the old-fashioned two years' dawdle on a farm, its teaching was altogether too vague, and its training lacked exactness; in fact there was no system in it. "Graze close and "see that the stock is thriving" would often exhaust all the information given to a 100-guinea pupil in one year's work on a grass-farm. I speak from the experience of novices who have been so treated; I do not for a second suggest that one year's apprenticeship on a farm is a bad thing as a preparation for the profession of land surveyor, while for a man who is to become a farmer I deem it essential. But I do contend that even where time and money permit it, the year will be better spent if the student has previously been taught how to learn.

After he has been told of the wonderful rotation which exists in a well-managed pasture, he will observe how coarse grasses come to the front and smother the valuable sward-forming herbage; and his increased acumen will engender care in the management of his grazing. He will appreciate how, by skilfully shifting his herds, the leavings of the more forward will be greedily cleaned up by the lean, not only saving him keep, but also ensuring a regular covering of bottom grasses on his land, without allowing the masterful bents to have their wicked way. These things, together with the interest evoked by personally dealing with the animals themselves while under tuition will, I contend,

enable a tyro to learn far faster on a farm after he leaves college than anybody who has not paid some attention to this subject can possibly believe.

I will not now go into the matter of the selection of stock, for I have treated of it at some length elsewhere, and I have already dwelt long on this suggested syllabus.

But before all the necessary teaching can be efficiently carried out, one must assume a college properly equipped and properly staffed. The equipment which most nearly concerns my subject is the farm, and I have no hesitation in saying that no applied agriculture can be properly taught unless the teacher has for the purposes of demonstration a well-managed and suitably stocked farm. The chemist or the engineer would hardly be expected to instruct students without the laboratory or the workshop, and yet, until a very short time ago, agricultural educational establishments existed without a farm of any description. I would like further to make it a condition that the farm must be run for teaching only and not for money-making or any other purposes. The stock, the cropping, the behaviour of the farm hands must all be regulated with the same end in view. Many practical men know that the proper teaching of even one pupil seriously interferes with profit, and how, therefore, can from 50 to 100 youthful enthusiasts be given instruction on some 300 acres without actual loss?

The time has gone by when a few demonstration pots or a field of manurial plots, or still less a collection of dried specimens, will be allowed by any competent person to satisfy the requirements of a modern agricultural educational establishment. Research work has vastly helped agriculture, and it would appear that the

promises of the future are even greater than the happy results of the past. But if instruction is to be worthy of the name of education, our teaching bodies must now set to work to cover this country with an army of skilled farmers, officered by trained land agents, capable of carrying out scientific field trials for themselves.

Now for a moment to speak of the qualification of the man whose business it is to train the student so that he may rapidly gain experience when the farming of land becomes one of his duties in life. The teacher of agriculture (and I here use the word agriculture in the conventional sense) must first have a thorough knowledge of farming and of farming matters. His training in agricultural science must be such as to make his teaching the bridge crossing the gulf which must always exist between the purely scientific investigator and the man who farms the land. His attainments will be useless if he does not possess that power of imparting knowledge to others, which alone entitles a demonstrator to be called a true teacher. These are the main accomplishments necessary, though the faculty of keeping order, the enthusiasm which inspires work, and the tact which overcomes prejudice, are all details which must not be forgotten. Agricultural education, having regard to state recognition, being only in its infancy, the number of such men cannot be great. Hence it behoves the public to encourage an adequate supply. Further, the efforts of those now teaching should, I submit, be encouraged in every possible way. This leads me to draw the attention of The Surveyors' Institution to a personal matter.

The Institution has, I venture to think, very wisely decided that a proper course of training shall precede

the first qualifying professional examination. This training may take place either in an office under articles or at a college or university recognised by the Council. The training at a college or university cannot be said to be adequately carried through if a student leaves without obtaining a diploma. The admission of men to the P. A. S. I. Examination after a college career without insisting upon their obtaining the diploma, may leave the way open to a smart youth to loaf or waste part or the whole of his course at college, and then under skilful coaching for six months, or even less with a good crammer, to pass an examination which qualifies him, on paper, to practise as a land surveyor. Speaking from experience, I assert that such things are done, and I further say that agriculture so learnt is, in my opinion, about as valuable to the land surveyor as knowing the multiplication table up to 24 times 24. May I earnestly draw attention to this state of affairs, and suggest that in order to still further suppress the "assisted" candidate, The Institution should, as part of the examination, insist on a *viva voce* on the farm itself. I may say I am fully cognisant of the difficulties in the way of such an examination, for I know that the numbers who come up are very great, but I cannot believe that the obstacles are insuperable.

When reading Mr. Sturge's Paper, one is over and over again struck by the argument that education is only begun when the student leaves college or the university, and I need not say how entirely I agree with him on that point. I have tried to show how husbandry is a subject which may be acquired more easily, more rapidly, and more thoroughly after a man has been properly taught how to learn. The greatest stickler for practice without science, the most ardent scoffer who ever took pains to decry theory, cannot more thoroughly

believe than I do that experience is necessary before a land surveyor can be prominent or even efficient in his profession. Sound teachers have no higher ambition than to give students a start which will allow of their acquiring experience quickly, and to develop the minds of those under their instruction so that they may be prepared to profit by the lessons which time alone can teach.

In conclusion, I would venture to say how highly I esteem the privilege of being permitted to read my Paper before a Meeting of The Institution, which so fully represents the leaders of agricultural thought in this country. I have great hopes for the advancement of my profession when so humble a Member as myself is allowed to treat of his one subject before such an audience. I take it as a sign that we teachers are now recognised as of real use, and I am sure that this recognition will strengthen and encourage many of us in our endeavours in working for the advancement of that much neglected but very sacred calling, agriculture.

Mr. CHARLES BIDWELL (Past President) said he was sure all present would agree with him in according a hearty vote of thanks to the reader of the Paper. Mr. Mackenzie was an enthusiast in his work, and had thrown a great deal of energy into the practical instruction to students in agricultural classes at Cambridge. It was now more than forty years since he himself took his degree at the University; and he had enjoyed the privilege of being on the Agricultural Syndicate ever since it was first formed, with the view of aiding young men on entering on their career in the scientific study of agriculture. The great point that the Agricultural Syndicate had in view was the thorough education of

the young men who were to be the future landowners, land agents, and surveyors of the country, as well as of men who came from the colonies to learn, and were to go back to practise. They had a most excellent staff, headed by Professor Wood, the Drapers' Professor of Agriculture, who he had hoped would have been present. At the head of the agricultural experimental work was Mr. Biffen, Professor of Agricultural Botany, whose name was familiar in connection with the work he had done with regard to the production of new varieties of wheat. They also had as Lecturer on Agriculture the gentleman who had just read the Paper, and there were other efficient members of the staff.

The University of Cambridge possessed a very good experimental farm, on which excellent experiments had been for some time carried out and where practical instruction could be given to students on the ground; and he believed it was the intention of the Syndicate shortly to acquire a larger farm where all practical details of farm work could be demonstrated.

He entirely agreed with Mr. Mackenzie that to teach students agricultural work properly a farm was wanted, so that a man could have demonstration on the land itself instead of following the old practice, now more or less becoming exploded, under which students did not combine scientific knowledge with practical work. Cambridge aimed at associating the two; good men who knew their work and could give demonstrations on the land had the advantage of combining science with practice.

There was another point quite apart from the actual education. Young men were sent up to the University where they had to meet all kinds and conditions of men, and he firmly believed that a young man who had the

benefit of two or three years' training with those of his own class would take a broader view of life, and not go out into the world as one of the great unkicked. He thought it was a very good thing for young men to mix in that way.

He did not propose—for time was short—to detain the Meeting long, but he would like to impress upon young men the advantage of taking an agricultural diploma. A really sound practical training could be acquired in two or three years, if one took, for example, Part I. of a Tripos examination, and aimed to get a degree in Agricultural Science. He had himself a nephew, whose father was a land agent, who was going up with a view to getting an agricultural diploma. Of course it was a new thing, and such new things took time for the knowledge of them to spread in the country; but he was convinced that a great work was being done in the direction of fitting the young men for their work as land surveyors.

He had much pleasure in moving a vote of thanks to Mr. Mackenzie, and he hoped the result of the Paper would be to set people thinking of the advantages which might be gained from a wise combination of science with practice.

Mr. LESLIE S. WOOD (Fellow) said it seemed to him extraordinary that the subject had never been brought up before, for those who went about the country must know that there was a great deficiency of knowledge about the matter.

There had of late years been a great advance in agriculture, and its methods had been brought up to date. There had also been an advance in education and its methods, and yet he did not believe that the subject of

agricultural education (combining the two) had made the progress that some people thought must have been the case, because there had been an advance in those two branches separately.

In seconding the vote of thanks to the writer, who had prepared his Paper with so much care, one could not help thinking that such a critic as Mr. Mackenzie must feel in his heart that there was a great deal that was at fault in the agricultural education of to-day. He had summed up the old-fashioned agriculturist and the young men who came away from the farm knowing so little, but were there not also men who came away from the agricultural college with ignorance almost as great? He believed that if the writer had gone into that subject a little more at length in his Paper it would have had greater effect, and been more appreciated by land agents as a whole.

It had been his pleasure lately to go into the question of agricultural education, which seemed at the present day to be so much at fault. The fault was perhaps partly in the men themselves. Agriculture, as the writer pointed out, was an instinct, and he thought that many men went to the colleges without having that instinct to begin with. They took up agriculture because it was a nice open-air life and appealed to them, but if they had not the instinct to begin with, it was very difficult to inculcate it. Everyone knew of cases where a man settled down in a new agricultural district and was disappointed because his crops were nothing like his neighbours'. He could not tell the cause of the difference because he had not the instinct.

He thought that this accounted for much of the trouble to begin with, and again although the association with other men might be very charming, one could not help

feeling that it might perhaps have disadvantages sometimes unless the students were kept under strict control. He was not speaking of one college more than another, for he knew of more than one where such control was found to be extremely difficult, for the men came up to study when they were out of the boyhood stage and could not well be punished. That particularly applied when the teachers got them away from the class-room out into the country. In the class-room the teacher had his men in touch with him and could talk to them and interest them, and if he had tact he could attract their attention; but how much more difficult it was to attract their attention and bring home facts to them on the farm itself. On a hot day, for instance, they would get tired and leave their work undone. That he feared often happened, and no doubt Mr. Mackenzie knew it to be so.

One other factor he believed to be most important. There was not only the absence of instinct in the men themselves and sometimes an actual unwillingness to learn, but he believed to a large extent the trouble came from those who taught. This arose to a large extent from the fact that the men who were responsible for the teaching work were not in touch with the requirements of the agricultural community up to date. They had to handle a lot of men who were presumably wanting to learn what was going to be of use to them in the future, but the men who were training them did not know what this would be. They were teaching their students day by day something which they thought was going to be instructive. A large amount of the knowledge so imparted was not going to be applied in after life, and because the instruction could not be kept up it disappeared utterly. If that work were linked up with other work which would be of real future use it would

all be useful, but to talk to a man on abstruse details of agricultural chemistry and the composition of manures without connecting the instruction with actual dealings with the land conveyed no meaning to him at the time, and he forgot it, because it was not associated with any actual practical work. A large number of men when they left the colleges had to take to work which did not bring them directly into contact with agriculture. They often had to pass three, four, or five years in an office, and there was a great tendency for their knowledge to be lost unless it had been associated with actual work.

He believed that a large number of the men who were teaching at the present time did not know the object or goal of their work. Their own education had often been that of the agricultural college, for the syllabus of the colleges required men of such training. So it seemed to him that instead of their being men brought from practical farm life to teach practical work, they were too often only competent to teach theoretical work in a theoretical way. He felt sure that if the teachers of to-day were taken out on a farm and asked practical questions, a great number of them would fail to answer them.

Those were his views, whether right or wrong. They might be due to ignorance of what was going on in agricultural colleges—they might be old fashioned—but he believed they were the views of a large number of men at the present time, and for that reason he regretted that time did not allow a greater opportunity of discussing the question at length, so that some authoritative message might go out to the colleges to mend their ways for the benefit of the profession in future.

Mr. J. A. EGGAR (Fellow) said he did not come to the Meeting prepared to speak and he should not venture at such short notice to make any comments on a Paper which required considerable thought before any practical man would venture to pass an opinion on it; but he had noted some points on which he would like to make a few remarks.

In the first place he might say that he had had the advantage of practical knowledge but not of a scientific training, and if there was one thing he regretted more than another it was that he had never had the opportunity, which many of the rising generation had, of acquiring scientific knowledge in connection with agriculture. He had of course tried to learn something of the scientific side, but what he had done in that way he had picked up for himself. Agricultural colleges were not thought much of in his young days, but although he had been given no means of acquiring scientific knowledge, there was little in the way of practical knowledge that he had not acquired in most of the branches of agriculture.

The author of the Paper alluded to the professional examinations of The Institution, but he would suggest to the Council that before they embarked on any alteration on the lines indicated, some of the practical Members of The Institution should themselves be examined by the Examiners. It would then be found whether the Examiners were asking practical questions. It would do the Members of The Institution no harm, and would, he thought, do the examiners a great deal of good and have a very useful effect on the curriculum of any new colleges which might be established.

His experience taught him that a farmer had never learned his business. One season could not be taken as

a guide for another, and no one could tell what effect any one season would have. For instance, it was impossible to say what effect last year's weather was likely to have on the next two or three years. It was only in the course of that day that a leading seed merchant—one of the most experienced and scientific men in the United Kingdom—told him that the effect of the bad season of last year would be felt for some two or three years, that certain latent defects, which seedsmen were under the impression had been subdued, came to the fore last year and it was impossible to tell how far those latent defects might affect the seeds of the next three or four years. He mentioned that as a point that must be taken into consideration. No land agent or indeed anyone taking up farming in connection with land agency must think that he could ever so learn his business that he could say he knew all about it; he would make a failure if he thought so. But let him take notes of this and that, retain them in his mind to apply for future use, for in that way he would best add to his store of knowledge.

Mr. NORMAN LAMONT, M.P. (Visitor) said he had come as a listener and not at all intending to speak, and he now rose mainly for the sake of associating himself with the very well deserved compliments which had been paid to Mr. Mackenzie for his admirable Paper, which had come, he thought, at a very appropriate time, though perhaps a little late from his own point of view. If the Paper were not confidential, he would ask to be allowed to show it to his colleagues on the Departmental Committee on Agricultural Education. That Committee had now been sitting for a year. It would be exactly a year to-morrow since they held their first meeting. They

had heard the evidence of an enormous number of witnesses from all parts of the country, and he hoped in another month or six weeks to see the publication of their Report.

So far as he was concerned, he might say that the views he had formed after that long experience went very much on the lines indicated by Mr. Mackenzie in his Paper. He thought a debt of gratitude was due to the existing teaching associations for the excellent work they had done. They had worked under considerable limitations of finance and without any very real assistance from the various Governments successively in power. If England was a little behind other countries in the matter of agricultural training there was great hope that we should now make up for the deficiency; and if the recommendations of the Committee were carried out and existing associations were strengthened financially and fortified in their work, there might be a hope that before many years England would successfully compete with Denmark, Germany, or the United States or with any country in the world in the scientific training not only of land surveyors but of landlords, farmers or small holders.

He begged again to thank The Institution for the honour done him in inviting him to the Meeting, and especially to express his appreciation of Mr. Mackenzie's excellent and instructive Paper.

Mr. EDWARD EAMES (Fellow) said he would like to say a few words to the younger Members. During his considerable experience among the land agents of the country he had found that almost invariably the successful land agents were men who had been for many years of their lives engaged in agriculture, not only scientifically,

but practically. Some member of many of the best firms had, at one time or other of his life, been a farmer, or very closely associated with farming, with the result that they had the confidence of landlords and others who employed them.

He knew that scientific farming was very difficult, and that without practical knowledge a man might lay down £5, and unless he were pretty smart might not get back more than 5s. He must admit as a practical farmer himself that, unlike a previous speaker, he found after 40 years' experience that he did not know nearly so much of the practical side of the question as he would like to. Surveyors, after applying all the knowledge they had in this world, would find they only knew very little by the time their period had run out.

Agriculturists unfortunately found that it was not only the soil they had to manage, but there was also that other terribly serious factor which they had to deal with—the weather. The seasons of one year were often diametrically opposed to those of another year, and it was absolutely impossible to say that, although practical knowledge was the finest thing in the world, a man who had acquired all that was possible of it was safeguarded against every difficulty which met the agriculturist. He thought land agents generally should make up their minds to become farmers for a certain number of years.

The vote of thanks having been put to the Meeting and carried unanimously,

Mr. MACKENZIE, in reply, desired to thank the Members present very much for the kind (too kind he feared) way in which the vote of thanks had been proposed and seconded, and the cordial way in which it

had been received and passed. He would like to say a few words, if time permitted, in answer to the remarks made by some of the speakers.

He was sure Mr. Bidwell would allow him to point out that when speaking of the various classes who were catered for by the Cambridge University course of agricultural instruction, he had omitted to mention the farmer. He personally, as a teacher, had not the slightest intention of letting the farmer slip away, as he believed that sound training would be of great benefit to landlords and land agents, but he hoped of even greater value to the tenant farmer.

Reference had been made by Mr. Bidwell to the intentions with regard to the Cambridge farm. There was great need of a very much larger farm at Cambridge. The present small farm, he ventured to say—and he thought he might say it as he had had nothing to do with the management of it until last July—was without equal as an experimental station, considered as a farm established only seven years. For a group of experiments it was a very fine place; but for his own purpose—for the purpose of taking men out on the land and adequately teaching them what was going on—all he could say was that he was still hoping and was much encouraged by Mr. Bidwell's remarks.

He thought that Mr. Leslie Wood suggested, if he did not actually say, that he (Mr. Mackenzie) might, if he had given himself full rein, have severely criticised many of the teachers and teaching establishments in this country. That was perfectly true, but in criticising them it was necessary to remember the amount of money that was given to found and maintain those establishments, and the bountiful stipends paid to the people teaching in them. Was not it a common thing for a man, on a stipend of some £150 a year, to have to teach

three or four subjects, each one of which subjects should entitle a separate teacher to a reasonable remuneration.

Criticisms of those establishments and the people who taught in them should not come from within. It should be impressed upon the agricultural public of this country who allowed such a state of things to exist.

Reference had been made by Mr. Leslie Wood to the discipline at the colleges. Did he think that the discipline of farm pupils on a farm was ideal? Personally he had not found it so, and he ventured to submit that, taking boy for boy, as many men went wrong as farm pupils as at agricultural colleges. He spoke from a fair experience of both.

Again, Mr. Leslie Wood referred to the class of knowledge given at the colleges, and criticised much of what was taught. Surely Mr. Leslie Wood, who was himself an authority on these matters, did not want to be reminded that at a college, as even in the case of a text-book, the training was of use just as much as the facts learned. For example, McConnell's book was a most useful one to carry in one's pocket. It contained practically all the facts on which information was wanted in farming, but would it tell a man when, for instance, he ought to turn his cattle out in the spring? The great object of training was to teach men how to think and how to observe. Actual knowledge itself could be forgotten as quickly as it could be learned, whether on a farm or in a college or university.

With regard to the questions which it was suggested that the farmer should be called upon to put to the teacher or teachers, he might say that it fell to his lot once to have a student who lived close to the college on one of the oldest and largest farms in the county. The student's father came to him and begged him to give up sending his son home asking questions. The

father, an eminently practical man, had not had a moment's peace since the son went to the college, where he was told many things in the lecture theatre or on the farm, and on his return home asked his father if they were true. How could he "tell him if they were true " or not," he asked, "when he had never so much as " heard of them."

That was just the point. A farmer was often a man of one solitary idea, but a competent teacher, who had naturally seen the agriculture of the whole or at any rate a great part of the British Isles (and his education would be limited if it had not gone still further), was likely to know more, and to be more able to open the mind of the student, than a farmer who had simply dealt with the same 300 or 400 acres of land all his life.

As to Mr. Eggar's suggestion, he hoped it would be unnecessary to examine the Council of The Institution, but if it were necessary he hoped he might be the examiner.

He should feel proud if Mr. Lamont used his Paper as he had indicated and laid it before his Committee which had worked so hard, and from whose deliberations good results might be hoped for.

In answer to Mr. Eames, he could only say that they did not, at colleges, teach people to lay down a £5 note in order to pick up 5s. though possibly they might not be able quite to tell them how to reverse the process; and that even at agricultural colleges they did not claim to be able to control the weather.

In conclusion, he desired again to thank the Meeting very much for their very kind attention to his humble contribution to the literature of a subject which, he believed, called for their very careful consideration.

The Meeting then adjourned.

THE LICENSING BILL, 1908.

By CUTHBERT J. LAKE (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
, INSTITUTION held on Monday, May 11th, 1908.*

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

In introducing the subject of the Licensing Bill in the form now before Parliament, I have sunk such personal views as I hold upon the trade in intoxicating liquors and the good or evil likely to result from the Bill, and have endeavoured to deal with its provisions with the open mind of a surveyor instructed professionally to report as to its effect upon land, bricks, and mortar, and their value, and it is in that spirit of inquiry we have met together to-night to examine and discuss it and its probable results so that we may interpret it for the benefit of our clients.

The law relating to licensed property as it now exists is known to all of us, and the Act of 1904 has had certain ambiguities of interpretation removed by the decision of Justice Kennedy in *Ashby's Staines and Cobham Brewery* cases, and by the more recent decisions in the *Corporation of Liverpool v. Walker and others*.

So far as it affects our work, the Act of 1904 pro-

vides that the power to refuse renewal of licenses on the ground of redundancy shall rest with Quarter Sessions on the reference of the licensing magistrates, and Quarter Sessions may, in their own discretion, refuse renewal, there being no appeal from their decision

But where a license is refused on that ground, compensation shall be paid to such of the parties holding interests in the property as suffer loss by the non-renewal. The compensation is paid from the Compensation Fund, which is created by a levy upon the licensed properties in the districts of the licensing area of Quarter Sessions, based upon the annual value taken for the purpose of the Publican's License Duty, and collected by Inland Revenue.

The levy must not exceed a maximum rate of charge which roughly represents 10 per cent. to 15 per cent. of the assessment. It is only leviable when there are redundant licenses to be compensated for, and where the amount produced by a full levy is not required the percentage may be reduced.

The levy is collected from the licensees with, and as part of, excise license, and is recoverable, as to all or part, from the other interests in the property in proportion to those interests and in accordance with a scale set out in the Second Schedule of the Act.

The amount of the compensation is determined in cases of dispute by the Commissioners of Inland Revenue, but a means is provided, and generally adopted, whereby the amount is agreed between the Quarter Sessions and the parties interested. Appeal lies to the High Court from the decision of the Inland Revenue.

Mr. Justice Kennedy clearly defines the method to be adopted in his judgment as follows: "The tribunal

“ has to assess the amount of compensation by finding
“ the price of the licensed premises in the open market,
“ adding to that the depreciation, if any, of the trade
“ fixtures, and deducting from this sum the price which
“ the premises would fetch in the open market if
“ unlicensed ”

“ The method by which the market value of the
“ licensed premises ought to be arrived at ” is clearly
“ defined as “ the price which the owner of the freehold
“ of the premises might expect to obtain for them *qua*
“ premises enjoying the privilege of a license if sold in
“ the open market.”

And further on in the same judgment the learned Judge discriminates between the compensation under the Act and under the Lands Clauses Act, and proceeds :

“ The provisions of Section 2 of the Licensing Act,
“ 1904, as I read them, embody a scheme of that which
“ may fairly be termed *equitable compensation* for the
“ *loss*, whenever a license is not renewed under Section 1,
“ of a valuable interest *which otherwise might reason-*
“ *ably be expected to endure*, although no legal right of
“ permanence could be claimed for it.”

Shortly therefore, the compensation is for the loss of the actual enhancement of market value which has been caused to particular premises by the exercise thereon of the right to carry on a particular trade.

There is only a very limited allowance made for any trade other than the licensed trade. The profit from what may be called the bye products of a licensed victualler's business is not taken into consideration directly, *i.e.* profits from sale of food, cigars, non-alcoholic liquors, letting of hotel rooms, &c.

The division, of the amount awarded as compensation is in the power of Quarter Sessions, but if any question

arises which Quarter Sessions consider can be more conveniently determined by the County Court they may refer the matter to the latter tribunal. The effect may perhaps be best exemplified by taking typical cases from among the metropolitan houses where my own work chiefly lies.

In most of the cases at the January Sessions the parties interested consisted of—

1. The Licensee ;
2. The Lessee (frequently mortgagee brewer in possession) ;
3. The Freeholder.

The Licensee's interest was generally the retail trader's interest, and was not such as could be considered in arriving at the total for division, *i.e.* his profit was retail trade profit, not improved monopoly value profit, so his compensation came in most cases entirely out of the total for division, and the greater his interest the worse off was the owner.

The Lessee and Freeholder were bound to accept a division of what was left between them, in the proportion of their respective interests in possession and reversion.

Speaking generally, the sum awarded for conversion goes to the party who will be continuing in possession, and for depreciation of the fixtures to the owner of the fixtures.

The effect of the compensation clause of the 1904 Act has been to facilitate the reduction in the number of the starveling and otherwise redundant houses at the expense of the trade, without inflicting excessive hardship on the trade, and it is apparently justifying itself to the trade, at any rate in many individual cases, by increasing the takings of houses left.

After taking into consideration the general conditions of the investment market of the last few years, as a whole, valuers seem to find it has left the values of inferior properties much as before; if they are taken, there is some compensation, if they are not taken, they continue to drag on paying the charge of the compensation levy. There were over 1,700 on-licenses abolished last year.

The middle-class house and the best class of house have been slightly improved. They are always safe licenses, and they draw something of the trade of the abolished houses, which partly compensates for the imposed charge.

Section 4 of the 1904 Act deals with new licenses and provides for the payment of monopoly value to the County Fund for County Council expenditure.

In practice, where a new annual license is granted it is calculated as though for Schedule "A" assessment of the house licensed, less the estimated Schedule "A" assessment of the house unlicensed.

A new license may be granted for a term not exceeding seven years, and the premium required is based upon the estimated annual monopoly value capitalised for the term.

As matters stand under the Act at present in force, the compensation levy produces something over one million sterling per annum, and has sufficed for the compensation on extinguishment of approximately 1,300 on-licenses per annum. In addition to these about 450 on-licenses are annually refused without compensation or are allowed to lapse, so the present diminution of old on-licenses is at the rate of about 1,750 a year. Last year the figures were 2,078, against which must be set off 68 new on-licenses granted, showing a net decrease of 2,010.

The total number of on-licenses throughout England and Wales was on January 1st, 1907, 97,554, including public-houses, beer-houses, hotels, restaurants, theatre bars, &c.

THE NEW BILL.

The Licensing Bill, 1908, contains 47 Clauses with 7 Schedules, and in reading it one is faced with the usual difficulties found in examining a new Bill, which has not had its inequalities of drafting checked and amended by discussion and debate.

The chief features, however, which we have to bear in mind in advising our clients as to what would be its effect upon their property are I venture to think, the following:

1. The statutory reduction of the number of licenses in the particular rural parish or urban district in which a licensed property is situate.

2. The time limit of 14 years, at the expiration of which all licenses shall expire and be renewed as new licenses, subject to very similar conditions of renewal and refusal as are set out in Section 4 of the Licensing Act of 1904.

3. The compensation given for the earlier determination of a license as redundant under Clause 1 of the Bill.

4. The monopoly value tax which will be levied at the expiration of the time limit on all "on" and all new "off" licensed houses.

5. The risk of loss of license without compensation at the expiration of the time limit, either by the discretion of the bench or the enforcement of local option in such manner as Parliament may hereafter determine.

6. The certainty that the maximum compensation levy will be made during the whole of the period prior to the expiration of the time limit, and the deductions which can be made by the payor of the levy from rent he pays his landlord, or by any lessee from his superior landlord.

7. The increased trade likely to accrue to surviving licenses.

8. The new provisions as to conditions which may be attached to the renewal of old or new on-licenses, with the increased risk they carry of forfeiture of license without compensation on the ground of default by a licensee, as well as by their financial burden.

9. The abolition of removals.

10. The power granted to licensing justices of imposing a monopoly value charge on alteration of premises.

The broad effect of the Bill if passed in its present form will be to make licensed property a far more speculative investment, either to own or to hold as security for loans, and in reporting upon a property we shall have to take into consideration a number of entirely new conditions.

Clause 1 of the Bill provides that the licensing justices shall reduce the number of on-licenses in their district so that, at the end of a period of 14 years from the 5th April, 1909, the number of those licenses in any rural parish or urban area in their district shall not exceed the scale set out in the First Schedule to the Act, as applied to that parish or area. We must therefore ascertain from the licensing statistics or elsewhere—

(A) The population per acre of the area.

(B) The number of licensed properties within it.

If we find the number of licenses in excess of the population as set out in the Schedule, we must form an opinion as to whether the licensing justices will recommend the extinction of these particular licenses or not, and further, whether the Licensing Commission will accept their recommendation.

The licensing justices must prepare and submit their reduction scheme before the 1st April, 1909, but may submit a revision of such scheme at any time subsequently.

Where we find a flourishing house doing a large trade we may, I think, conclude the license will not be abolished, but, more particularly in urban districts, the smaller the trade the greater the risk.

We must consider whether the population per acre of the licensing area is increasing or diminishing, or whether there are special considerations which show that the license is reasonably required in order to meet the wants of the district or of persons resorting to the district, and also observe whether the license is merely auxiliary to the user of the property as, for example, a hotel or a place of amusement.

If the house is in Wales or Monmouth, the additional contingency must be considered of the further, or even total, extinction of the licenses in the area, at local option, by a bare majority of the parochial electors.

If the license be extinguished as redundant within the time limit fixed by the Bill, we have to consider what compensation would be payable, as compared with the compensation now awarded under similar conditions.

In connection with this compensation the first innovation is that the total amount would be assessed by the Commissioners of Inland Revenue, *without the right to appeal against their assessment.*

The method of valuation which the officials will be instructed to adopt is to ascertain the assessment of the house for the purpose of income tax, Schedule "A," at the time when the licence is refused, and to estimate the same assessment as if the premises were not licensed. The difference is to be considered to be the annual monopoly value, and this is to be capitalised on a 4 per cent. basis as for the unexpired period of the time limit. They are instructed to add to this such sum, if any, as will compensate the license-holder for *his* loss of business, having regard to his conduct and the period he has held the license, and for depreciation of trade fixtures.

The cost of converting the premises and the depreciation in value of the fixtures remain as under the 1904 Act. The former is not clear, but may, I think, be assumed.

The compensation to the licensee is apparently to be the same as at present, although Mr. Asquith on introducing the Bill made a contrary statement, which, with all due respect, I venture to say I am unable to follow. His words were: "I think the interests of the tenant, of the actual license-holder, the man who is carrying on a public-house, were very unduly considered, the license-holder got very little out of the compensation, the great bulk of it has gone into other pockets."

I do not follow this, for in those cases which have come under my notice as one of the valuers to the London Licensing Committee, I have found that the licensee has usually received in compensation at least as much as he paid, or ought to have paid, to go into the house, whilst it is rare to find the other interests getting their money back even though they had given originally no more than a fair price.

I believe in some of the earlier cases in 1905 the licensees were not so fortunate, and I expressed such an opinion during the discussion on Mr. Wallis's Paper in this room in 1905, although in my own cases I had given at least as much as they should have paid apart from their "valuation."

Of course "the bulk of the compensation has gone "into other pockets," but those pockets had produced as a rule more than the same proportion of the capital. The words in Clause 10 of the Bill are: "Such sum, if "any, as the Commissioners of Inland Revenue think "fit to add as compensation for the license-holder's loss "of business."

This may mean compensation for loss of livelihood and not merely reimbursement of sunk capital plus cost of removal, and, if so, one welcomes the innovation, for with the large decrease of licensed houses contemplated by the Bill, it would be more difficult for a dispossessed licensee to obtain a fresh house, and many licensees will have to follow fresh trades.

The fundamental difference between the methods of arriving at the amount of compensation to be awarded under the Bill as compared with the 1904 Act affects the owner's interest. Broadly speaking, under the Act the wholesaler's profit has been capitalised on an 8 per cent. to 10 per cent. basis, and to this has been added the capitalised value of a fair tied rent, that being the figure an investor would give for the house in the open market.

From this has been deducted the capital value of the house unlicensed, thus giving the sum total of the investor's loss, and from this total has been deducted the compensation to the retailer, and the balance has been awarded rateably to the various interests other

than the licensee, *e.g.* freeholder, first lessee, second lessee, &c.

Under the Bill, it is assumed that the *Schedule A gross rateable value* represents the rack rental value of the licensed premises, and that such Schedule A value, less the Schedule A value unlicensed, multiplied by 25, is at the present time the value of the house over and above its value without a license, as was assumed by the Commissioners of Inland Revenue prior to Justice Kennedy's decision under the 1904 Act.

We know that this is seldom the case, for custom in the practice of rating has built up the figures of the gross annual value by other methods which have given, as a general rule, a far greater divisor.

That rateable value bears no fixed proportion to capital value is glaringly exemplified by the figures given in the statistics of proceedings under the 1904 Act, most admirably and clearly set out by Mr. Harper in the return issued by the London County Council under date 31st March last.

He has shown the compensation awarded, in all cases of licenses extinguished in London under the Act, to all parties interested for all purposes, and has divided the total in each case by the net rateable value.

The result shows, for 242 cases, the divisor of the rateable value into the amount of the compensation to vary from 3 to 128 years' purchase, the average being 34 years' purchase of the net rateable value, which would be equal to about 28 years' purchase of the gross (Schedule A) value.

The total rateable annual value of these houses prior to the extinguishment of the licenses was £18,392, and the value unlicensed may, I think, be fairly estimated at one-third, say £6,130. The total compensation awarded

was £625,920, representing an average of 51 years purchase of the difference between the rateable values licensed and unlicensed.

It must be borne in mind that the compensation totals in the statistics include the allowances for depreciation of fixtures, and compensation to the licensee, in addition to the compensation to the owner.

Comparing the figures in cases under my own knowledge, I am inclined to think that following the same lines it would be found that the *owner's* compensation averaged about 40 years' purchase of the difference between the annual rateable values the difference of 11 years represents the compensation to licensee and for depreciation of trade fixtures.

Taking two houses from among my own cases, where I am able to estimate the annual value unlicensed, I see the owner's interest compensated for on the basis of 16 and $40\frac{1}{2}$ years' purchase of the difference between the annual values, and the recipient of the greater amount was the more dissatisfied with the sum awarded.

But under the Bill the difference between Schedule A annual value, licensed and unlicensed, is treated as the basis of valuation for compensation in conjunction with the four per cent. table for the unexpired period of the time limit, *i.e.* in the first year with the 13 years unexpired, the multiplier will be ten years' purchase, in the seventh year six years' purchase, and in the last year one year's purchase.

If the time limit be 21 years, the multiplier in the first year would be 14 years' purchase: 28 years would make it $16\frac{2}{3}$ years' purchase.

For the purposes of comparison, I have taken Mr. Harper's figures and converted his average net rateable

value into average Schedule "A" value by adding one-fifth.

I have taken his average compensation per house, and have made similar allowance for the compensation awarded to the licensee, and the item for depreciation of fixtures, so as to ascertain the average net amount which the owners received, and I estimate that this average represented $42\frac{1}{2}$ years' purchase of the difference between Schedule "A" value licensed and unlicensed.

I think one can fairly compare this $42\frac{1}{2}$ years' purchase with the compensation proposed to be awarded under the Bill, and at the same time it must be kept clearly in mind that compensation under the 1904 Act means a very considerable loss to the owner who, even under existing circumstances, pays the greater part, and sometimes even the whole, of the licensee's compensation out of his own pocket.

I read the Bill to mean that the time limit does not affect the licensee's compensation or the depreciation of fixtures item during the 14 years' period, so that those interests will, during that period, stand in the same position as they do now.

Time Limit.—After the 14 years all licenses will be considered to be new licenses renewable as under Section 4 of the 1904 Act (except that new licenses may not be granted for a term), and, as under that Act, no compensation will be given in the event of such new licenses not being renewed.

Whether it be for 14 years as set out in the Bill, or for any longer period, the result will be to convert something "which otherwise might reasonably be expected "to endure" for so long a period as there will be public demand for the liquor such license grants power to sell,

into a more or less precarious leasehold for a 14 years' term.

Those licenses which endure to the end of the time limit will not of necessity be abolished, they will still have value, but they will be taxed by the amount of the annual value of their monopoly, and will rank as new licenses subject to the same conditions of renewal as under Section 4 of the 1904 Act, and in addition to a liability to further restrictions.

To consider for a moment what monopoly value is:—

The *theory* of how to arrive at the *rent* of a public house is simple. Take the gross receipts less the gross payments including interest on capital invested, and from this take such a sum as will remunerate a tenant for his risk and labour. The balance is what he will pay as rent.

The monopoly value of a licensed house is the increased annual rent it would let at to an occupying free tenant over and above the rental value such house would be worth unlicensed, and excluding any monopoly value to a brewer.

The 1904 Act defines monopoly value as "the "difference between the value," *i.e.* rental value, which the premises will bear in the opinion of the justices when licensed, and the value of the same premises unlicensed, provided that in estimating the value as licensed premises where the profits are not wholly derived from the sale of intoxicating liquor, no increase value arising from profits not so derived shall be taken into consideration.

It follows that the larger the premises' value the smaller the monopoly value, *e.g.* the monopoly value of a small house costing £1,000 and doing 10 barrels

is greater than a house costing £5,000 and doing 10 barrels.

In practice this monopoly value is arrived at by taking the payments and takings from the books of the house, making allowance for interest on the capital invested and assessing as for inhabited house duty, but deducting from the assessment the amount at which the property would be assessed if it did not possess a license.

After the expiration of the time limit therefore, one must provide this monopoly value as an extra deduction from the owner's rent and bear in mind that it is liable to revision every twelve months, and will increase or diminish rateably with the income of the tenant.

The risk of loss of license without compensation at the expiration of the time limit is not easy to calculate. I think the governing factor will be something beyond the demand of the public for that which the license permits the sale of, and will depend more upon the position which clubs will hold at that date.

At the present time there are approximately 7,000 clubs as against 97,000 on-licenses; provision is made for the reduction of the latter by nearly 30 per cent. and some of the licensed trade will probably be driven to the clubs, but the casual trade will always continue, and if a house be so conducted as to make it attractive to a good class of customer the risk of extinguishment should then be small.

I hazard no suggestion as to the effect of the local option clause after the expiration of the time limit.

The imposition of the maximum compensation charge during the time limit period involves a reduction of the rent receivable by the owner for the whole period, and must be considered in our calculations for net income purposes.

As a set-off to this, the increased trade likely to accrue to surviving licenses may be considered, but it must be purely speculative in many cases, for West Ham with 7·17 on-licenses per 10,000 population will under Schedule 1 be entitled to more on-licenses, but must continue to pay the compensation levy to reduce the excess in Huntingdon, which has a proportion of 95 on-licenses per 10,000 inhabitants.

If a house is closed some of the trade will go to the nearest convenient house of a similar character, and some of it to the grocer and club, and the chances in each case can only be guessed at, but it will have to be borne in mind, the surviving house must anticipate heavier demands from the licensing authority as conditions of renewal, in addition to monopoly charge.

Clause 20 provides that "Licensing justices may "attach to the renewal of an on-license any condition "which they think fit to impose in respect of any of the "following matters ;"

Subsection (A).—The employment of women or children on licensed premises is one we may heartily approve, but as valuers we know that the substitution of a barman for a barmaid means a higher wages bill to the licensee.

Subsection (B).—The arrangement of any part of the premises open to the public ;

Subsection (C).—Any access to the premises ;

Subsection (D).—Relating to measure of liquor ;

Subsection (E).—Relating to Sunday closing, are, however, but making clearer existing conditions.

Subsection (F).—Enables the attachment of conditions affecting the restriction of the circumstances under which intoxicating liquor may be sold to *bona-fide* travellers, in addition

to the provision in Section 18 (2) that the traveller shall have travelled six miles from his lodging place.

These two conditions, the one certain, the other possible, will abolish Sunday trade, although it will probably increase the Saturday night bottle trade of the urban house.

Sub-section (G).—The closing of the premises, on polling days will hardly make a difference.

Clause 22 abolishes removals, but this follows naturally as the result of the time limit clause, and even now removals are not often resorted to.

Clause 25 gives the licensing justices power to levy a monopoly value charge on old on-licenses prior to the expiration of the time limit as a condition of consent to alteration of the premises under Section 2 of the Act of 1902, if they think such alteration will increase the monopoly value of the house. So that *at any time* the improvement of a house by alterations which give increased facilities for the trade, involves the imposition of a monopoly value charge upon the house. This charge, however, would fall upon the licensee, and not be recoverable in part from the owner.

Clause 5 of the Bill provides that Section 4 of the 1904 Act, which contains monopoly value provisions in relation to new on-licenses, shall apply to *new* off-licenses.

There is no provision made for imposing a charge on existing off-licenses.

The Second Schedule shows the compensation levy to be the same as that provided for in the 1904 Act.

The Third Schedule deals with the deductions from rent on account of compensation levy, with the same

scale of deductions as in the 1904 Act, but with a special provision that, except where the rent is payable by the license-holder, the amount deducted from the rent shall not in any case exceed one-tenth of the rent, and no deduction shall be made where the rent is less than one-fifth of the Schedule "A" assessment.

Broadly speaking, the valuation problem is the alteration caused by the Time Limit, the Statutory Reduction, the new Compensation Rules, the risk of eventual extinguishment without compensation, and the imposition of monopoly value charge.

The effect must be a general large reduction in value varying with each house, and for the early years of the time limit period there will be little buying or selling until the trend of the reduction schemes is disclosed.

There has never been a permanent property in a license, *Sharp v. Wakefield*, has been in the minds of every investor holding any interest in licensed property, and the contingency of a lost license has always been reckoned with in arriving at the value. Brewery companies' debentures chiefly secured by tied house properties have been issued and bought readily to pay 4 per cent., and the present proposals seem to hit the man who has put his savings into licensed property rather hardly.

In districts where the statutory proportion of licensed houses is exceeded, the poorer class of house, more particularly those doing a liquor trade only, must be reduced in value to the owner to something very little above their compensation value. The best will remain and will probably enjoy increased takings, but there will be a reduction in capital value in proportion to the local risk of extinguishment and the unexpired period of the time limit.

The effect upon breweries will depend upon the

amount of their trade derived from tied houses. As owners of licensed properties they will suffer loss by the diminished capital value of their houses, and a loss of income by the abnormal reduction of their output channels. If they own few tied houses they will probably suffer but little loss.

I venture to think the distiller will benefit by the Bill, for if public-houses are few and difficult of access, the consumption of spirits, which has been increasing during the past few years, will be stimulated. The public will buy spirits in bottle, as the liquor is easier to carry about and store.

Whatever be the length of time limit fixed before monopoly value is imposed and compensation ceases, the owners must suffer loss even though a more generous scale of compensation be substituted for the present curious formula.

As a valuer I have not found the investing public have made allowance for such new conditions as the Bill imposes, and I do not see that they could have anticipated them, or that there is sufficient justification for them.

The 1904 Act is increasing the reduction of old on-licenses by approximately 1,700 a year, and most licensing justices have prepared schemes embodying a consistent course of action for the reduction of licenses in their areas.

If Parliament determines to retain the main principles of the present Bill and decides to resume the monopoly value of licenses at the end of a fixed period, and to make an arbitrary reduction of their number without reference to the special needs of a particular locality, it should at least extend the time limit to 20 years and provide a period, of say five years, after that as a "close time" during which no license should be refused merely on the ground of redundancy.

Further, the compensation during that period of 20 years should be based on Mr. Justice Kennedy's decision, taking market value as before 1904, but making allowance for the time limit remaining unexpired at the date of the reference and adding instead of subtracting the licensee's compensation.

Any deficiency in the fund should be made good from the Imperial Exchequer.

These amendments, while they would still leave the scheme open to many and serious objections, would go some way towards equalising the loss sustained by those whose interests will be destroyed.

I do not think they would convert the scheme into a just one, for the owner would still be hit hard, but some such modification would certainly lessen the hardship likely to arise from the sudden interference with property of the present drastic proposals.

We have from time to time been met in compensation cases, and elsewhere, with this suggestion that there is no permanence in a license. There is a very well-known case in connection with the White Hart Hotel at Reigate which seems to me to somewhat bear upon the point.

The tenant for life attempted to renew a lease of this house with a covenant that the lessee should not sell intoxicating liquors on the premises, but the trustees obtained a declaration that the tenant for life was not entitled to make any such restriction, but was bound to insert in the lease a provision for the continuance and renewal of the license which existed, thus recognising a property in the license which the tenant for life was bound to protect for the benefit of his successors.

There is also a case of *Belton v. London County Council*, decided in 1889, where the Council acquiring licensed property under compulsory powers, contended

there was no reversionary interest in the license, to the owner, who had leased for a term of which 36 years remained unexpired, but the Divisional Court declared that the owner of the reversionary interest was entitled to compensation, a judge observing that the Council's proposition seemed to involve a grievous injustice, and I do not see that a time limit can be fairly imposed unless compensation is paid out of the State funds in addition to any compensation payable out of the insurance fund contributed to by the trade.

I think that beyond the mere valuation problem, we as surveyors can also look at the probable tendency and effect of the Bill upon the country as a whole.

We are all anxious to support any change in the legislature which will improve the moral and physical conditions of our fellow countrymen, and we heartily welcome every suggestion put forward, as showing a desire to improve those conditions. We must recognise that this Bill is drafted honestly with the intention of promoting temperance in this country, and we must look upon the scheme as a whole, and say what in our opinion will be its effect if passed, beyond the mere effect on properties which now hold licenses.

It seems to me that this sudden arbitrary reduction of the privileges granted by the State must react upon the value of all land, bricks, and mortar. It must create in the minds of investors some feeling of insecurity, and will therefore affect all classes of property.

I venture to express my personal view that the local licensing justices of England and Wales are the people best qualified to judge whether or no the granting or refusal of a license will benefit or harm a district, and an arbitrary reduction is likely to do more harm than good.

Going about the country as we do on our work, which is largely that of inspecting the homes of the people, we see a great deal of the lives of the people. In my practice alone I act for various housing companies, who house well over 10,000 working class tenants. We do not find the people a drunken people, but we do meet among them cases of misery caused by drunkenness, and everyone here will agree that any measure which will reduce the number of these cases must be supported by us as a profession.

As an estate manager and a surveyor, however, it appears to me that the Bill will, in many districts, by making it more difficult to obtain beer in small quantities, stimulate the sale of more potent spirit. If I am right in this, the Bill will not attain the object which its framers desire.

Mr. ARTHUR VERNON (Past-President) in moving a vote of thanks to the Author of the Paper, said the subject contained such a variety of matters of immense interest that it well deserved the most careful consideration that could be given to it. It also afforded a very wide range and variety of points for consideration, inasmuch as it was absolutely untrammelled by precedent. There were few certain points in the Bill which would guide one's judgment as to its future, but at present it supplied a delightful combination of anxiety, confusion, financial doubt, and risk, which might provide an unlimited range of speculation and forecast.

He felt personally much indebted to Mr. Lake for his excellent Paper. He gathered from his opening sentences that he wished to treat the subject with the calm, quiet and analytical skill of a surveyor, without bringing in political views or party bias, and he thought he had well

adhered to that intention. He had, it was true, just suggested the motives of the promoters of the Bill, though he did not think he quite saw into the minds of those who framed it. There were many, no doubt, who could give a reason for questioning that motive, and if one could judge of matters as lawyers did, it might be seen that it was not in the first instance a temperance Bill, but that it was largely a financial project.

Personally he felt great interest in the matter, because for 33 years he had sat on licensing benches in two districts, he was concerned as valuer for two county compensation authorities, and as a citizen he would welcome any Bill which, while it promoted temperance, would at the same time do justice to all the interests concerned. It was to be regretted that an Act passed so recently as 1904, and doing good work, should so soon be altered or interfered with almost before it had "got into its stride." He made that remark as one of the surveyors who were now getting into full knowledge of how the principles of compensation could be fairly applied under that Act.

The most extraordinary results might be expected if the new Bill were passed in its present shape. In 1904 he consulted one of a committee of brewers from his own and neighbouring counties as to what should be regarded as a fair principle of compensation. He asked what in their opinion would simply, justly, sufficiently, and yet not over liberally, repay them for the loss of a certain number of their houses which must disappear, and they told him they had come to the conclusion that the compensation for the loss of a house in the country, selling probably more mild beer than anything else, should be on the basis of £500 for each barrel of beer sold per week. Thus for a house selling

four barrels per week the compensation would be roughly £2,000 under that principle.

Under Mr. Justice Kennedy's decision many houses at four barrels a week had received, not the £2,000 the brewers hoped to obtain, but about £1,250. Under the new Bill the amount would be, roughly, between £400 and £500, and it was no wonder that in a pamphlet entitled *Drawing a Bow at a Venture* two learned and literary brewers had complained that in 15 years, if the present Bill became an Act, they would receive, at the rate of 1s. 4d. in the pound on the same kind of house, the large sum of £33.

He was sorry to see that Mr. Justice Kennedy's decision (which appeared to him to be an admirable exposition of the law as he found it when he gave that decision) had been rather ridiculed and made a subject of mirth in the House of Commons. It was said to be on too generous a scale. That might be so or not; but it was at the present moment the highest judicial exposition of the law as it stood.

He would like to point to one or two matters in the Bill. Monopoly value was referred to and defined, but he must say that he had never been able to see monopoly in that trade. He had never seen a brewer who was not subject to constant and keen competition. Hotels and clubs vied with public-houses, grocers were always in evidence, while postal facilities were universal.

The word "monopoly" he believed meant, primarily, two things—either the sole control of an article or the sole right to sell it, and it was, he thought, hardly a right term to use with regard to individuals in this particular trade. He considered that instead of "monopoly value," "trade value" or "licensed value" would be more appropriate.

It was said that the Government proposed to resume or renew a trade value, but no one could resume what he never possessed. It was clear, too, with regard to the licensed value, that in many cases after a license was granted a valuable trade was brought about by recurring improvements made by the capitalist and by the enterprise of the licensee.

With regard to the 14 years' limit, this Bill was really a 14 years' deferred sentence of death to the existing tied trade, with variable and constantly decreasing compensation during that time.

Some spoke of it as if it were 14 years' purchase and the money would be paid down on the spot; but no money was paid to the brewer although within 14 years all his interest in the houses was to cease, and he was only to resume his right to his licenses in two-thirds of those houses by the will and pleasure and under the various conditions of different benches of magistrates in the county.

He had, as he had said, sat on a bench of magistrates for 33 years, and he should not like to trust financial questions affecting his own livelihood, and least of all matters such as an expert valuer or surveyor could alone deal with, to the capricious or honest dislike to the trade shown by so many benches of magistrates throughout the country. To suggest that there was to be no appeal to a higher authority seemed to him to impose on the trade a very crude and altogether violent and un-English kind of treatment from which this free country had never yet suffered, for which there was no precedent in the past, and of which he hoped there was no danger in the future.

It was a curious fact pointed out in the Paper that in some districts the moderate calculations of the pro-

moters of this Bill would not apply, because there were not enough houses at present to supply the necessary number. That was an accident which he supposed could be easily remedied.

In writing the Paper Mr. Lake had no doubt thought more of London than the country when he expressed a belief that the larger the house the less would be the fairness of the compensation. He might, however, point to an instance where he thought the reverse would happen. There were houses in some seaport towns where many visitors congregated and where the brewers had the extraordinary advantage of small houses assessed under Schedule A at £30 a year, and doing a trade of 15 barrels a week.

Such houses were little gold mines for the brewers, but they might be extinguished under the provisions of the Bill and compensated for merely on the basis of any trifling difference between the licensed and unlicensed value, according to the assessments.

It was also contended that under Mr. Justice Kennedy's decision and the operations of the 1904 Act the tenant had been very harshly treated, as he did not receive his due proportion, and that his interest must be more largely considered in the future.

He had worked out 40 or 50 cases to see if there were any truth in that, and he found in the counties to which he referred it was absolutely without foundation. In all cases, as the reader of the Paper said, the tenants had received more as compensation than they had a right to expect, and when paid 10 per cent. to 15 per cent. of the total amount awarded, they had almost all expressed themselves as being perfectly satisfied.

There were many points of interest that one would be tempted to dwell upon if time permitted, but he

would only say with regard to the whole subject that the Bill as it existed appeared to him to be a monument of confusion: it was a whole library of inaccuracies: it was filled with provisions that could not possibly work, and there were so many inconsistencies in it that, unless it were radically altered, its results must be so inequitable that it could never be satisfactory to the community.

He had once asked Lord Beaconsfield, for whom he acted as agent, how a certain Agricultural Bill then before Parliament would operate, and received the reply that when it was thrashed out in Parliament and thoroughly criticised by the Press, and had been subjected to the usual storm of opposition which all such Bills had to pass through, it might be possible then to understand it, and perhaps get it into suitable shape for the advantage of the nation.

Mr. J. G. HEAD (Fellow) said, quite apart from the fact that among the large gathering present there must be many who were anxious and well qualified to take part in the discussion, one most important consideration prevented him from troubling the Meeting with a long speech. Unlike Mr. Vernon, he had little experience in dealing with licensed properties, but that very fact rendered him perhaps the more sincere in his thanks to the author for his excellent Paper, as he was one of the many who would derive instruction and information from it.

He would not venture to make any criticism or comment, but would content himself by heartily seconding the vote of thanks to Mr. Lake for the excellent Paper he had so carefully prepared.

Mr. J. MARKS (Visitor) said he should like first to offer his hearty congratulations to Mr. Lake for the very useful and indeed masterly Paper which he had read. In it he had clearly set forth the operation of the 1904 Act in a most accurate manner. He had also forecast what was likely to be the working of the Bill of 1908 should it become law.

In the few remarks he proposed to make he intended to refer only to the financial aspects of the Bill. In dealing with this financial question, Mr. Lake, on page 403, had clearly set out the manner of valuation which would be adopted by the Inland Revenue Commissioners in assessing the amount of compensation payable under this Bill for a license taken away on the ground of redundancy. In order to compare the amount to be paid by way of compensation with that paid under the 1904 Act, he would, if he were permitted to do so, read an extract from a letter which his firm had recently sent to the press, having special reference to London houses. His own experience in the country was perhaps rather limited, but in London, without wishing to seem boastful, he might say it was different.

The return issued by the Home Office on February 23rd last shows that for the 115 licenses extinguished in the county of London in 1907, under the Act of 1904, the authority awarded the sum of £327,763, of which amount £46,542 was apportioned as the licensee's share and the balance to the other interested parties according to the nature of their respective interests. The aggregate assessment Schedule A for those licensed houses was £9,686.

Under the provisions of the new Licensing Bill the compensation payable would be (see Clause 10) the difference between the Schedule A assessment of the

licensed premises and the Schedule A assessment of the same premises unlicensed, such difference being capitalised on the 4 per cent. annuity table for a term not exceeding 14 years, but during the year 1909 (see Clause 44,) the renewal of the licenses involving payment of compensation is not to be refused.

The unlicensed assessment may fairly be taken at one-third of the licensed assessment, so that the amount which would have been paid under the 1908 Bill for those same 115 licenses would have been £64,560, thus:—

Licensed assessment	-	-	-	£9,686
Deduct one-third as unlicensed assessment	-			3,230
Leaving the difference to be capitalised	-			6,456
On 4 per cent. annuity table for 13 years,				
years' purchase	-	-	-	10
				<u>£64,560</u>

The Bill provided for compensation being paid to the license holders for loss of business in addition, assuming the same amount to be awarded in other respects as under

the 1904 Act, add - - - - - £46,542

Making the total compensation payable for

the first year of the time limit - £111,102

as against £327,763 actually awarded under the Act of 1904.

This was assuming that the whole of the licenses were taken away during the first year of the time limit, but if the seventh year (the mean) of the time limit were taken as the basis of calculation the compensation would be £43,468, annually diminishing until the last year, when £6,146 would be the sum payable to the owners, plus such amount as the Inland Revenue might award to the license holders.

So that for a total of £327,763 there would be £111,102, assuming that the Inland Revenue would

award to the license holder the same amount as under the 1904 Act. But would the Inland Revenue award the same amount to the license holders? He doubted it. The 1904 Act said with regard to license holders, that "every tenant shall in no case receive a less amount than he would be entitled to as tenant from year to year of the licensed premises." Thus, under that Act, the license holder, whatever his holding might be, was to be considered at least as a tenant from year to year. The 1908 Bill provided in Clause 10: "Such sums (if any) as the Commissioners of Inland Revenue think just to add as compensation for the license holder's loss of business."

The Inland Revenue authorities would have to act judicially, and if the license holder were merely a quarterly tenant how could they award him more than the amount of damage he would sustain by loss of business as a quarterly tenant? He thought they would be bound to allow considerably less than he would have received under the Act of 1904.

A good deal had been said with regard to the assessment of licensed properties. It had been alleged that they had not been assessed on the same basis as that on which compensation was awarded. With regard to London—and he was dealing particularly with London—that was not a correct statement. Mr. Lake, at page 405 of his Paper said, "The result shows, for 242 cases" (*i.e.* the number of cases of licenses suppressed in London since the 1904 Act came into operation) "the divisor of the rateable value into the amount of compensation to vary from 3 to 128 years' purchase, the average being 34 years, which would be equal to about 28 years' purchase of the gross (Schedule A) value." That included the loss on fixtures and the amount allowed for conversion of the premises to unlicensed

uses. If one were to deduct from the amount awarded for those 242 houses the cost of fixtures and the allowance for conversion of premises to unlicensed uses, it would reduce the number of years' purchase from 28 to 26, which he thought would be fair.

In the next paragraph Mr. Lake said: "The total
" annual value of these houses prior to the extinguish-
" ment of the licenses was £18,392, and the value
" unlicensed may, I think, be fairly estimated at one-
" third, say £6,130. The total compensation awarded
" was £625,920, representing an average of 51 years'
" purchase of the difference between the rateable values
" licensed and unlicensed. It must be borne in mind
" that the compensation totals in the statistics include
" the allowances for depreciation of fixtures and con-
" version of premises and compensation to the licensee,
" in addition to the compensation to the owner. Com-
" paring the figures in cases under my own knowledge,
" I am inclined to think that following the same lines it
" would be found that the owner's compensation
" averaged about 40 years' purchase of the difference
" between the annual rateable values. Taking two
" houses from among my own cases, where I am able to
" estimate the annual value unlicensed, I see the owner's
" interest compensated for on the basis of 16 and 40½
" years' purchase of the difference between the annual
" values, and the recipient of the greater amount was
" the more dissatisfied with the sum awarded."

Now, in the London County Council return, "Licensed
" premises 1908," on page 21, Mr. Harper, speaking of
the compensation awarded says, "It must be remembered
" that rateable value forms the basis for the levy of the
" compensation charge." That was not so. The con-
tribution to the compensation fund and the license

duties are levied on the gross assessment, and therefore, comparing the assessments of licensed houses with compensation awarded, it was the gross assessment that should be taken into consideration, and not the rateable value, as was done by Mr. Harper. In dealing with the 242 cases he said the average rateable value of those 242 houses was £76. The addition of one-fifth (£15) gave a gross assessment of £91 per house. He agreed with Mr. Lake that the unlicensed gross value was about one-third of the licensed value. One-third from £91—say £31—showed a gross assessment per license of £60. Now the average compensation paid for those 242 licenses, according to Mr. Harper's return, was £2,587, including in each case the fixtures and allowance for conversion of premises. Take off, say, £187 on account of fixtures and for conversion, which would be a fair sum, he thought, and there would be left £2,400 as the average compensation paid for each of the licenses suppressed since the working of the 1904 Act.

Now, see how that compared with the assessment levied on those houses. The formula, in assessing licensed premises, as settled by the Assessment Conference called by the London County Council in 1904, was that in addition to the fair rental value of any building in London, a sum equal to 5 per cent. on half the premium given for the premises and the business subject to such rent, should be the gross annual value. Applying that formula to the £2,400 ascertained average value of license the half premium would be £1,200. Five per cent. on this would be £60, which exactly agreed with the gross average assessment of the 242 licenses extinguished, and yet we heard so much said about the inequality or unfairness of the assessment of licenses in regard to the compensation paid for those

licenses when suppressed on the ground of redundancy. He thought he had demonstrated to them by the figures he had given that the gross assessment of the houses referred to was exactly in proportion with proper compensation paid for those houses when the license was taken away.

If those same licenses were taken away under the 1908 Bill what would be the amount of compensation they would receive, on the average, compared with that received under the 1904 Act? During the first year of the reduction they would be compensated at the rate of £600 each instead of £2,400, because they would only be entitled to 10 years' purchase of the £60 assessment of license.

The Bill provided for a re-assessment of the licensed property on the application of the rateable party. This would mean that in order to get the same £2,400 compensation the gross assessment of the license (apart from the building) would have to be increased from £60, as at present, to £240.

In plain English, the party to be compensated would have the choice of two things. Either he would adopt the means of getting over-assessed and ruining himself in paying rates and taxes, or he would run the risk of being extinguished during the time limit and being inadequately compensated by a number of years' purchase on the 4 per cent. table, on the difference on Schedule A, licensed and unlicensed.

He ventured to say the present Bill was not so framed as to promote the cause of temperance at all. In the first place it did not deal with grocers' licenses, of which a good deal had been heard with regard to their effect on intemperance. It did not propose to deal with clubs in any effective manner. It was not applied to Scotland or Ireland, which two countries were, he

believed, quite as much in need of temperance reform as England, and it was unjust in its financial proposals.

Although licenses were granted for one year only, they had for centuries been looked upon as permanent during good conduct, and they were so treated by the courts in many instances, as in the cases referred to by Mr. Lake, and they were in the matter of death duties treated as of a permanent and continuing character.

He thought he had said sufficient to show that the Bill was one that ought not to become law unless considerably amended.

Mr. A. KING (Fellow) said it was quite possible to discuss the principles of the Licensing Bill without holding a brief either for the license holders or for the temperance party, but what surveyors were principally concerned to advocate was fairness and justice to all parties, and he feared that the Bill, if it were passed in its present form, would give neither one nor the other.

The Bill aimed at a large, industrious, and legitimate business which had been built up under the protection and even the encouragement of the legislature, and much careful consideration was necessary before, with one blow, the same legislature should sweep away the vast interests which were now involved.

An inquiry into the financial position of the industry showed that the capital invested represented something like £250,000,000.

The promoters of the Bill did not say that it was brought forward in the cause of temperance. The drink bill of the country in 1906 represented £167,000,000, and in 1907 it fell to £160,000,000, and was still decreasing.

Whenever the legislature had endeavoured to deal with the drink traffic it had almost always signally failed. In the early part of last century a Bill was brought in entitled the "Gin Act," with the object of prohibiting the consumption of that spirit or of making such restrictions that it would be almost impossible to get it. The only effect was that in every apothecary's shop it was obtainable as a medicine.

It was necessary to regard all such questions from a judicial point of view. Here was a legitimate trade built up and deserving of the fair consideration which, if this Bill were passed, would be withheld. It must also not be lost sight of that the licensing trade contributed something like £40,000,000 per annum to the national revenue.

He agreed with Mr. Vernon that the 1904 Act had not had sufficient time to work, nor had it yet received full consideration. The author of the Paper showed that under that Act good service had been done; licenses had been extinguished and compensation in respect of those licenses had been borne by the trade. He was as keen as any man in his appreciation of temperance, but he could only feel that if a man's livelihood were to be taken away or private interests or property to be confiscated for the public good, the holders of those interests should in fairness be compensated.

MR. NIXON HORSFIELD, A.R.I.B.A. (Professional Associate), said he wished to have the honour of supporting the vote of thanks to the author of the Paper, and to thank him for the very lucid exposition of the Bill, which he thought would have attracted very little notice if it had not been for the violent opposition raised on the part of the trade interested.

The Paper dealt with the subject on the basis of the value of property, and it was in considering the property as property that he wished to add his quota to the discussion.

The first point to be considered was the nature of the property in question. It was not a property in bricks and mortar or in fixtures. It was property in an expectation of a monopoly value which Mr. Vernon had said did not exist. That monopoly value had been variously defined, and it had also been said that the State could not fitly resume a monopoly which it had never possessed. He admitted the State had never possessed that monopoly value, but it had granted it, and was therefore properly entitled to resume it.

The basis of calculation, he understood, was to be Schedule A assessment, and if that assessment were too low it would affect the amount of compensation to the owners according to their interests; but they had had the advantage all the time that it had been too low, and could hardly complain if thereby they lost in the future. If the assessment were too high they had been paying too much and they could get it back. A place had been mentioned and described as "a gold mine to the brewer." If taxes had not been paid on the proper basis on that gold mine it was time that that leakage should be recovered by the State which had all the time been entitled to it.

One previous speaker, referring to the actual licensee, said very properly that in awarding compensation to a lessee who was only a weekly, monthly, or quarterly tenant, and acting judicially, the Inland Revenue would not be able to give him the the benefit which would accrue to a tenant from year to year. That was quite fair; there was no doubt that if a man had only a monthly interest

regard must be had to that fact, and he must not, as under the existing Act, have the benefit which would have accrued to him had he had a yearly interest.

Applying that principle to compensation for extinguished licenses; a license was tenable from year to year, and the owners should not have the benefit of more than that period. But there was the expectation, and in order to avoid hardship to people who had built up their hopes on that expectation, the operation of the Act would as he understood it be gradual. At the present moment it would proceed on a 10 years' purchase and gradually diminish until the value which the State had—for no consideration—granted, would be resumed.

It had been said that the Bill was not promoted in the interests of intemperance, but if that were so then the licensed trade had nothing whatever to fear.

Mr. M. J. JAMES (Fellow) said he would like to ask Mr. Lake whether, after all, the actual amount of compensation was such an important matter? It came from the compensation levy of which practically 90 per cent. was provided by the brewers, and the 90 per cent. went back to them. Mr. Whitbread in his speech on the second reading of the Bill said he knew that payment by the brewers to the levy was one per cent. of the capital, but they also had one per cent. returned for suppressed houses.

If the monopoly value or the compensation were too low in the case of houses to be closed, was the same to hold good for the remaining two-thirds of houses when the time limit had expired? If it were to be raised now a higher price must be paid at the end of the reduction period for the monopoly value of unclosed houses.

He would like to ask the author of the Paper also whether in valuing property he had valued the license as a freehold. If it were a freehold then it should in all calculations be so valued; but he had acknowledged that, since the *Sharp v. Wakefield* judgment, there had been no real property in a license.

He assumed that this Bill must naturally decrease the value of licensed property, and the reasonable thing brewers, as business men, should do would be to provide a sinking fund to replace the value of the property they would have to surrender. It had been proved that a small sinking fund of about 15s. per cent. per annum for say 21 years on the total value of their capital would represent about 40 millions, and that together with the receipts from the compensation fund plus the commercial value of closed houses would practically amount to the whole monopoly value.

Mr. A. F. SLEE (Visitor) said other speakers had already forestalled some of the remarks he was prepared to make. He would deal principally with the instances in which he had personally been concerned as a valuer of licensed property. He would mention four properties which he had sold during the tenure of office of the present Government, but previous to the introduction of the present Bill. In one there was a 36 years' lease, and the amount of capital invested in the purchase was £10,834. The amount of net profit, after paying working expenses, was £861 a year. The amount required to get back the capital, together with interest at 5 per cent.—the sinking fund on that particular property—was £654 a year. The amount required to create a similar sinking fund during the term of 14 years

would be £1,094. So that the tenant, who on the original basis was not getting a very large income out of it, instead of making any income at all would be a heavy loser over the transaction. Assuming the 14 years' limit to be in existence, the price which he would be able to give to return him the same income as he was getting on the price he paid for 36 years would be £6,500; so that with a 14 years' time limit the property would depreciate from £10,800 to £6,500.

In another case of a 22 years' lease the price was £3,750, and the net profit £379 a year, and the sinking fund £284. The sinking fund required under the 14 years' limit would be £379; and in that case the price that could be given to produce the same income after allowing for depreciation would be £2,800. That would mean a depreciation of £950 on his purchase.

The other two cases are (1) a 25 years' lease. Profit £560. Depreciation on 25 years' lease £378. Depreciation on 14 years' time limit £538. Price given £5,330. Reduced price under a 14 years' time limit £3,750. And (2) 24 years' lease. Profit £602. Depreciation under 24 years' lease £326. Depreciation under a 14 years' time limit £454. Price given £4,500. Reduced price under a 14 years' time limit £3,230.

In his Paper Mr. Lake said he thought the spirit trade of the country was on the increase, but he did not think the return of excise duty would bear this out. He found, according to the published returns, that for the year ending 1903 the amount paid for excise duty on spirits was £19,033,296.

In 1904 it was £18,677,818.

In 1905 it was £18,135,951.

In 1906 it was £17,765,352, and

In 1907 £17,745,125.

That gave a decrease in the five years between 1903 and 1907 of £1,288,171. It was perhaps misleading to compare one year with another, and an average extending over a number of years was more correct. If the average of those five years was compared with the amount in 1907 there was still a decrease of £526,383. So from any point of view it appeared that the spirit trade was decreasing.

He had also looked at the beer trade returns, and found that they bore out the same argument. In 1903 there were some 35 million barrels; in 1904, 34 millions; in 1905, 33 millions; in 1906, 33 millions; and in 1907, 33 millions, the odd figures showing a continuous slight decrease. A comparison of 1903 with 1907 in the same way showed a decrease of more than 1,600,000 barrels, and the average for five years compared with 1907 still gave a decrease of over 546,000 barrels.

The immense difference between the compensation paid under the 1904 Act and the Bill of 1908 had already been pointed out by Mr. Marks, and everyone who had experience in dealing with licensed property could bear out every word he had said. To take a couple of cases that he had valued this year. In one case under the 1904 Act the compensation was £5,381, and under the Bill it would come out at not much over £1,000. In another case the compensation awarded, £2,420, would be £578 under the new Bill.

In dealing with the difference between the new Bill and the old Act, one matter had not been referred to. Instead of the usual reduction of, say, two-thirds between the licensed value and the unlicensed value, there were cases in main thoroughfares where the

Assessment (A) value would not necessarily be decreased to any great extent, and it was even possible it might be increased. But in such a case there might be a large trade, the confiscation of which would not be compensated for at anything like its proper value. The increased rent which the owner would receive might compensate him, while the lessee and tenant would undoubtedly suffer.

He agreed with Mr. Vernon that the tenant, in every case in which he had been concerned, was fully satisfied with the award.

There was always a question present in his mind, whether the brewers received the full market value. They received a price for which they certainly could not purchase a similar trade. They could not possibly replace the lost trade by the compensation they received under the most liberal interpretation of the judgment of Mr. Justice Kennedy, and they would be losers to a much greater extent under the new Bill.

Mr. GEO. CORDEROY (Fellow) said he wished to ask one short question. In his Paper Mr. Lake had given two rates of purchase, the 25 years' rate of the new Bill, and the 40 years' purchase which he estimated was now being paid under the present Act. Mr. Lake had not discussed the comparative merits of those two rates from the valuer's point of view, and he should much like to hear his opinion on the point.

Mr. W. E. HORNE (Fellow) said there was just one question he would like to ask Mr. Lake. A great deal was heard of the monopoly value of houses. In the

case of public-houses in towns he had no doubt this might be arrived at, but he thought that a monopoly value in a country district was rather a difficult thing to decide. In a village with one public-house in it the time might come when the monopoly value had to be fixed by the magistrates. If the owner of the public-house did not accept that value, and was not inclined to go on selling beer there, what was to happen? Was the village to go without any beer? Was any other villager in any other cottage to be allowed to supply beer in a building which was not suited to the sale of liquor, or would somebody be allowed to come and build a house which would be suitable, and in that case would he have the permanence of the license assured to him in future? If that were not done, would the State, the county, or the magistrates build a house themselves and sell beer themselves? It was a very curious point. The monopoly value in cases of that kind would not be the adding twice the present assessment value, it would be entirely a question of bargain with the owner, and he was not at all certain that the owner would not have the whip hand at the end.

The vote of thanks having been put and carried unanimously, the Meeting then adjourned.

As time did not permit a reply from Mr. Lake at the Meeting, he has by permission sent the following answer to some points raised during the discussion :—

I have first to thank the mover and seconder of the vote for their kind expressions of appreciation, and the Members present for their courteous reception

of my Paper, and I wish especially to thank Mr. Vernon and Mr. Horne for drawing attention to "monopoly value."

There is of course no such thing as monopoly in the sale of intoxicating liquor by a publican. "Monopoly" is merely a word misused, and this misuse of the word has caused much confusion in the minds of the general public.

What is called "monopoly value" is no more than the excess annual value of a property, *quâ* property, created or continued by the enjoyment of a certain amount of legal protection against competition in the trade there carried on.

I have received a communication from a Member who had not an opportunity of speaking, which I should like to notice here, as it states the valuation problem in connection with a licensed property far more clearly than I could do.

In valuing a licensed property, four things are together valued in order to arrive at the total.

1. The premises.
2. The so-called "monopoly value" being the enhancement of the premises due to the license being attached.
3. The goodwill of the brewers, *i.e.*, the ordinary wholesale trade profit on the goods sold.
4. The retailer's goodwill value, being the remuneration for his personal exertions.

Of these, Nos. 2, 3, and 4, taken together would all be covered by the term "trade interests," used by Mr. Vernon.

All these interests are extinguished under the Bill.

No. 4 is to be compensated for to some extent.

No. 3 is to be destroyed without compensation at all.

No. 2 is to be destroyed without adequate compensation, its market value being in excess of the provision made under the Bill.

The real crux of the question is No. 2, the so-called monopoly. This is all the State can be said to have granted.

It is not by any means certain that the burden imposed by the Bill upon licensed property will not ultimately fall upon the first element of value, the property itself, and constitute a charge rather upon the land than upon the brewer's interest.

I have already found cases under the 1904 Act where a "monopoly value" has been placed upon premises by Licensing Magistrates, which has been considered by the applicants to be so prohibitive as to prevent their taking advantage of the license, and should the Licensing Bill be carried through, it may well happen in some cases that the "monopoly value" imposed by the Licensing Bench on old houses may also be found so prohibitive as to prevent a trade being carried on.

I am glad to find myself so closely in accord with so great an authority as Mr. Marks, whom it has been my pleasure to meet on many occasions in professional matters. I agree with him that, speaking generally, licensed properties are not consistently under-assessed, as was proved by the vast amount of litigation which has taken place in connection with the rating of licensed properties. But it seems to be thought by many people that the proper assessment of a property bears some direct relationship to its capital value. That there is some truth in such a contention must be admitted, but it is not even a half truth, and must in every case be

qualified by so many "ifs" and "assumings," that no valuer would depend upon the assessment of any property, whether licensed or unlicensed, as a basis for a fair valuation.

With reference to Mr. Slee's remarks, I am sure Members will feel much indebted to him for his statement as to actual amounts paid for houses, and the corresponding compensation which would be paid under the Bill.

With regard to the increase in the consumption of spirits, I am afraid my own remarks were not sufficiently clear. I should rather have stated that so far as I had been able to check the figures, I found that the consumption of spirits was not decreasing so rapidly as the consumption of beer.

In reply to Mr. Corderoy's question as to the comparative merits of the two rates of years' purchase, first under the 1904 Act, and secondly under the new Bill, I have reduced the figures in Mr. Harper's statistics in such a manner as to find their relationship to the owner's compensation, and I find that under the 1904 Act, the average compensation which has been granted to owners in the 242 metropolitan cases set out, represented $42\frac{1}{2}$ years' purchase of the difference between Schedule A value, licensed and unlicensed. To arrive at the net Schedule A value, I have added one-fifth, and assumed the unlicensed value to be one-third of the value licensed.

From the total compensation to all parties, I have deducted the compensation allotted to the licensee, and the compensation for depreciation of trade fixtures. I had to compare this $42\frac{1}{2}$ years' purchase under the 1904 Act, not with 25 years' purchase, but with the 4 per cent. table multiplier applied to the unexpired period of

the time limits. That is to say, with a 14 years' time limit it would be 10 years in the first year, as against $42\frac{1}{2}$, and in the last year it would be one year as against $42\frac{1}{2}$.

The fault, however, of the whole system of valuation indicated under the Bill lies in the fact that it is assumed that the differences between Schedule A value, licensed and unlicensed, would properly bear a fixed relation to so much of the capital value of the house as would be lost by the extinguishment of a license, and this, as every valuer knows, is not the case.

THE DOVER VISIT.

AT

THE ORDINARY GENERAL MEETING,

Held at Dover, on Thursday, 21st May, 1908.

The Members taking part in the visit of The Institution were received on the morning of Thursday, 21st May, by the Mayor, Walter Emden, Esq., J.P., (Associate), in the ancient Maison Dieu, and then assembled in the Connaught Room, which by the courtesy of the Mayor and Corporation had been placed at the service of The Institution for the business of the Meeting.

Taking the Chair at the commencement of the Meeting, the Mayor in a short speech cordially welcomed the visiting Members to this the premier Cinque Port. He felt it, he said, at the same time a great pleasure and an honour to welcome a body of men representing such wide interests and charged with such great responsibilities as the Members of The Surveyors' Institution, who, he believed, would find much to interest them in the ancient town for which he had the privilege of speaking. It had been built long before any systematic attempt at town planning, and indeed owed not a little of its picturesque interest to the peculiar and difficult conditions under which it had been developed. Bounded on one side by hills and cliffs, and on the other by the sea, it had been still further shut in by forts and military

works. The consequence had been a somewhat overgrown village of straggling streets, the only possible extension being in one long line up the valley of the Dour. He feared that the measures now adopted or contemplated by the Legislature would never produce such picturesque or even beautiful towns as were some of the old English ones, which owed their arrangement to natural surroundings or almost, he might say, to accident.

But he was there not to praise Dover or suggest improvements in its planning, but to give a hearty welcome in the name of the Corporation to the Members visiting the ancient borough which he was proud to represent, and to wish them a pleasant and profitable visit.

The PRESIDENT having thanked the Mayor and Corporation for the cordiality of their welcome and for their courtesy in facilitating the conduct of the Meeting by permitting the use of the Hall,

His Worship then vacated the Chair, which was taken by the President, and the following Papers were read.

FIRST PAPER.

DOVER.

A HISTORICAL SURVEY.

By MARTYN MOWLL,
Register of Dover Harbour Board.

I have the privilege this morning of addressing this Meeting of The Surveyors' Institution on the subject of "Dover," my native place and life-long abode ; but as I understand that the time allotted to me is about twenty minutes, and the history of the town extends to twenty centuries, it will not be possible to do more than make a slight reference to a few matters of special interest.

Dover possesses a threefold interest: in its town, its fortress, and its port, and an adequate account of either of these would take far more time than it is permissible for me now to claim.

It is possible to say truly of Dover what can be said of few other places; that it has a fairly continuous history for 2,000 years. It emerges from prehistoric darkness with the advent of Julius Cæsar into England, and there is little doubt that in his day, and during the

Roman occupation of Britain, Dover, or as the Romans called it "Dubris," was the principal port of disembarkation from the Continent, and was made use of by Julius Cæsar, and by succeeding military commanders, as a base of very considerable importance.

In excavating the soil from time to time, and particularly during the extension of the town in recent years, many traces of the Roman occupation have been brought to light, and have shown that the settlement at this place must have covered a large area. The roads leading to Canterbury and to the Roman Fortress of Richboro (which, with the Castrum at Reculver, protected the entrances to the Stour) still follow the courses originally laid down, and tradition assigns Hougham Church on the high ground to the west of Dover as the site of a Roman military signalling station between Dover Castle and Cæsar's Camp near Folkestone.

What is probably the most complete Roman building in the United Kingdom still stands within the precincts of Dover Castle, viz. the Pharos or light tower, which with its fellow on the opposite cliff undoubtedly indicated the entrance to Dover Haven to the Roman vessels as they crossed and re-crossed the Channel.

The Pharos, which still remains on the eastern cliff, owes its preservation to the protection afforded by the fortifications while that which formerly existed on the western cliff disappeared centuries ago. Early in the 17th century the only remnant was a mass of conglomerate about 12 feet in height which was then and afterwards known as "The Devil's Drop," being a shortened expression for the Devil's Drop of Mortar, the ignorance among the common people at that time leading them to trace anything which they could not readily explain to the action of the powers of evil. Even this

mass of conglomerate has now, with the exception of a small portion, disappeared. This small portion is enclosed by railings within the fortifications on the Western Heights. The remains of this Pharos were also known as the Bredenstone, and the site is especially interesting as having been for centuries the spot on which successive Lord Wardens have been, at a Grand Court of Shepway, installed into their high office as Warden and Admiral of the Cinque Ports.

Adjoining the Pharos in the Castle is the church dedicated to the Virgin, which rivals the claim of St. Martin's Church at Canterbury as the most ancient Christian church in the United Kingdom.

In the early centuries of the Christian Era a foundation of secular canons was located within the precincts of the Castle, but these were removed late in the 7th century to new buildings erected in the middle of the town, some slight remains of which are still existing near the Market Square. This foundation was dedicated to St. Martin, the patron saint of Dover, as is believed was the older one in the Castle, and the emblem of the saint dividing his cloak with the beggar adorns the seal both of the Corporation and of the Mayor.

In the 12th century, the conduct of the monks having created a scandal, other monastic buildings were erected outside the walls of the town, the site of which is now occupied by Dover College, and which foundation was also dedicated to St. Martin, and became known as St. Martin-the-Less, or the New Work, in contradistinction to the older foundation, which was thereafter known as St. Martin-le-Grand. This latter foundation endured until the Reformation, when it was suppressed in common with other monasteries, and from that period till thirty years ago the ruins were occupied as farm buildings.

The refectory of the monks is now used as the principal teaching hall of Dover College, the rooms over the old gateway form the College Library, and the building supposed to be the Strangers' Hall is the College Chapel.

Dover Castle encloses a considerable area, and besides its earthworks is defended by two walls, with forts or towers at intervals bearing the names of great feudal lords who in Norman and later times were responsible for their upkeep and defence, and who have left on the page of history lives remarkable for strength, courage, and endurance.

The walls of the keep or citadel are of great thickness and strength, and the Castle must in the Middle Ages have been quite impregnable against assault. It has again and again resisted attack, and by its strong defence turned the tide of military operations otherwise successful. Its reputation as a fortress was such that it was known as the Lock and Key of England.

Turning from the Castle to the Town, the Mayors of Dover have followed each other in regular succession since the Conquest, and Domesday Book contains a reference to the Gillhalla or Guildhall of the burgesses. In the Middle Ages the town was walled, and some of the gates have only disappeared within the last 150 years, their positions being marked by tablets in the walls of adjoining houses recording their existence and demolition.

The meetings of the freemen were formerly summoned by the blowing of a horn, and thus were called horn blowings. The horn dates from early in the 13th century, and is perhaps the finest example of its kind in the country. It is still one of the treasures of the Corporation, and is always blown on the occasion of a King's proclamation being read in the borough. It is

carried on all State occasions before his worship the Mayor.

From the reign of Edward 1. until the Redistribution Act of 1885 Dover returned two members or barons (as they were formerly styled) to the House of Commons, who were elected, until the Reform Act of 1832, exclusively by the freemen of the borough. Although since that Act the freemen have long since been outnumbered by the rate-qualified electors those who, by birth or apprenticeship, can still claim the honour of being freemen, have a right to exercise the parliamentary franchise without any other qualification.

The only ancient churches in that part of Dover which was within the limits of the old borough are the old church of St. James the Apostle and the church of St. Mary the Virgin. The former stands just at the foot of the Castle Hill, and has for centuries been somewhat closely associated with the Lord Warden of the Cinque Ports, as in this church he was always accustomed to open his Court of Admiralty.

In former days, and even within living memory, cases have been tried in the church, but later it was customary, after opening the Court, to adjourn the further proceedings to some convenient place in the neighbourhood. By consent of the parties the trials now generally take place in London. Within the limits of the Cinque Ports the jurisdiction of this ancient Court is equal to that of the High Court of Justice. Formerly the Lord Warden exercised similar jurisdiction in Chancery, but this has disappeared. The Lord Warden also in his Court of Lodemanage formerly appointed and regulated all pilots of British ships navigating the channel.

The church dedicated to St. Mary the Virgin was, as

a result of the changes wrought by the Reformation and the suppression of the monasteries, granted by the King to the inhabitants who until the latter part of the last century elected the minister and his assistant on each vacancy. From the time of the Reformation the Mayor of Dover was annually elected in this church, the whole body of freemen having a voice in the selection. Members of Parliament were also elected in the church, and the Mayor and Corporation were provided with seats at the east end of the church at the rear of the communion table.

The elections in the church—those of Members of Parliament often lasting for several days—caused grave scandals, the church being oftentime the scene of wild excitement and uproar; but it was not until the year 1826, and then only by a special Act of Parliament, that such elections were removed from the sacred edifice to a more appropriate place. The Corporation seats were the subject of a long and bitter controversy, but when the church was restored it became possible to remove them and this anomaly thus disappeared. The vicar of the church has always acted as chaplain to the Corporation, and for the past 250 years the clock in its old Norman Tower has provided for the inhabitants the local standard of time, being wound and kept in order at the expense of the Corporation. In the 17th century the Corporation were accustomed to pay one of their servants a salary for ringing one of the bells of the church at 4 and 8 o'clock in the morning, as signals to the inhabitants to get up and as the time for breakfast respectively.

The only other ancient religious house existing within the limits of the old borough is the hall adjoining that in which we are assembled. The hall, which formed

part of the hospital of the Maison Dieu, was founded in the reign of King John by Hubert de Burgh, one of the great warriors connected with Dover Castle. It was established as a rest-house for pilgrims to Canterbury and remained until suppressed in the reign of Henry VIII. The hall and the adjoining buildings were then used as a victualling office for the navy—the Jacobean house now occupied as offices by some of the borough officials being built for the officer in charge of the victualling department.

This state of affairs continued until about 1830 when the victualling office was given up, and the premises being sold by auction were bought by the Corporation and appropriated as municipal buildings. Previous to that time the meetings of the Corporation had for upwards of two centuries been held in a Guildhall in the market square erected in the reign of James I. This Guildhall, which was erected on wooden pillars and was a very interesting example of the building of the period, was unfortunately pulled down about 50 years ago in order to enlarge the Market Square. The hall in which we are now assembled was erected by the Corporation in accordance with the designs of the late Mr. Burgess, and is considered by experts to harmonise admirably with the old building. It was opened by H.R.H. the Duke of Connaught, and by his permission bears his name.

Turning now to the third subject which makes up the history of Dover, viz. its harbour, we come to deal with a part as ancient and as important as the other two. The Federation of the Cinque Ports, of which Dover is the chief, has existed from time immemorial, and although efforts have been made again and again to trace the origin and object of this federation such efforts have so far been unsuccessful.

As has been stated, the Romans made much use of Dover Haven, and during excavations traces of their work have been discovered. At that time the Haven was sheltered by the cliffs, but the eastward drift of the beach, which has effectually blocked up the other harbours of the Cinque Ports and in some cases removed the seashore to quite a distance from them, at Dover gradually filled up the protected part between the cliffs and rendered it necessary for the Haven to be artificially preserved if it were to continue to exist.

As the port provided the principal means of communication with the Continent, and at certain times in our history the only authorised means of such communication, large sums were lavishly spent to protect the Haven, but the beach remained a never ending source of trouble, and it was only in the middle of the last century, when the Government pier was built, that the drift of beach across the mouth of Dover Harbour was effectually stopped and the shore between Dover and St. Margaret's, which formerly had been well covered with beach, was laid bare.

The development of the Government harbour promises to maintain the importance of Dover and its facilities for shipping for many years to come.

In dealing with this rapid review of the history of the town, fort, and port of Dover, the question may fairly be asked why should this place of small numbers, having about a century ago only a population of some 8,000 people and now numbering in spite of its great development in recent years not quite 50,000, have such a long history, and why should it not, like many other similar places, have decayed and disappeared? Why is it that on ancient maps Dover alone, or in company with two or three other places only, appears in the south-east part of

England ? There is but one answer : the accident of its geographical position has insured its prominence in the past and will insure it as long as our empire exists.

Those who have studied history will know that obscure places, when brought into the great trade routes of the world, have risen from obscurity into eminence and from poverty into wealth, while as such routes have changed cities which were formerly great have crumbled into decay or absolute extinction. For many centuries the Greeks and Romans, the Phœnicians, the Venetians, the Genoese, and the Spaniards, in turn maintained maritime supremacy in the Mediterranean Sea and governed and enriched themselves on the trade of Europe, but on the decay of the Spanish power and the rise of the English and the Dutch, the great trading sea route for Northern Europe was changed from the Mediterranean Sea to the English Channel, and now there passes through this narrow silver streak, ever going and coming and bearing the produce of all nations, a mighty fleet of ships always increasing in size and speed, and, to use a figure of speech sailing or steaming within a stone's throw of Dover Pier.

Thus it happens that Dover, situated on the track of this continuous stream of commerce, and a port where ships can touch without hindrance or delay, is the most convenient place of call for the vessels which maintain communication between Europe and our cousins in America. Landing here American visitors can proceed with equal ease either to London or to Paris, the two principal objectives in Europe of their travel, and they can do this without the delay inevitable at other ports on the English coast.

Dover is the Gate of the Kingdom for the Continent

of Europe, and through it pass passengers now numbered annually by hundreds of thousands, and increasing as the facility of travel increases and its expense diminishes. Almost within living memory the passage of the straits was made in small sailing vessels subject to the vicissitudes of wind and weather, and often occupying many hours on the voyage, while the poor exhausted passengers had in certain conditions of the tide to be carried ashore on the backs of sailors. This seems scarcely credible to travellers who at the present day pass or repass in an hour in the existing luxurious turbine steamers with the precision and little more motion than is experienced in a railway train.

Dover has thus a famous history and a great future. But long as has been its history, and great as may be its future, one cannot help thinking in contrast of the transient character of the stay of its human inhabitants. Since the arrangements for this Meeting were made, now some nine months ago, I am the third person who has been selected to address you on the history of the town chosen as your meeting place. The other two, also life-long residents in Dover, and the occupants respectively of the important offices of Town Clerk and Clerk of the Peace, have completed their sojourn here and have departed.

The duty and privilege of the inhabitants of such a town is to hand on (improved if possible) the inheritance entrusted to their care.

Dover was one of the first boroughs in the country to adopt the Public Health Act and to have a proper system of drainage and a municipal water supply. It has for many years possessed a large and efficient gas undertaking supplemented recently by the introduction of electricity both for light and power and as a pioneer community in

this respect successfully inaugurated an efficient electrical municipal tram service. In these and many other ways the present generation is endeavouring to follow in the footsteps of its predecessors and to maintain the traditions of this ancient Cinque Port.

I am confident that you, as expert Surveyors and as our welcome and honoured visitors to-day, will earnestly desire that when the work of the present generation is surveyed by those yet unborn, the survey may reveal that the privilege has been grasped and the duty faithfully and effectually performed.

Mr. HOWARD MARTIN (President Elect) said he felt it a great privilege to be entrusted with the duty of proposing a very cordial and hearty vote of thanks to Mr. Mowll for his Paper. At each of the provincial meetings the reading of a Paper on the history of the town had formed a part of the proceedings, but there had never been one more eloquent, more interesting, or more useful than that which Mr. Mowll had prepared and read. The Paper contained much interesting information, and The Institution was under a great debt of obligation to Mr. Mowll for undertaking what must have been, for a busy man, a very difficult task. It was, he thought, another example of the fact that if one wanted extra work done it was best to go to a hard-working man for it.

Mr. H. HAYWARD (Fellow) said he had much pleasure in seconding the vote of thanks to Mr. Mowll, the more so because, when the death of Sir Wollaston Knockner the Town Clerk, and of Mr. Thomas Lewis, Clerk of the Peace, had made it impossible to carry out the original programme, he had so readily prepared a Paper of such

very great interest to all the Members visiting Dover. There was probably no one in the town with the same knowledge of Dover as Mr. Alderman Mowll, who, he might mention, had a most complete collection of paintings, engravings, and plans relating to it in the past, and possessed a quite unique store of information as to its history.

The vote of thanks having been put to the Meeting and carried unanimously,

Mr. MOWLL, in reply, said he felt quite unworthy of the kind remarks which had been made, for which, however, he was indeed grateful. A man who had made the study of the history of his native town the hobby of a lifetime, found it a real pleasure and not a task to be allowed to speak on it.



SECOND PAPER.

THE HYDROGEOLOGY OF THE DOVER
BASIN, DOVER HARBOUR, AND THE
CHANNEL TUNNEL :
THE POSITION OF THE EAST KENT COALFIELD.

By JOSEPH LUCAS (Professional Associate).

Gallia est omnis divisa in partes tres.

The Chalk is now by common consent divided into UPPER, MIDDLE, and LOWER. These divisions were used by Ansted in 1850, and demonstrated for Surrey by Caleb Evans in 1870, but it was Dr. Ch. Barrois who first showed, in a memoir that remains as a classic,* that the English Chalk—then still divided into Upper and Lower, and represented by one tint on the Geological Survey Map—corresponds to the *Étages Sénonien*, *Turonien*, and *Cénomanién* of d'Orbigny for France.

* Recherches sur le terrain crétacé supérieur de l'Angleterre et de l'Irlande, Lille, 1876, 225 pp. 4°.

England, Belgium, Denmark.	France. (d'Orbigny.)	Germany and Switzerland. (Hein. Bach, <i>Geol. Karte</i> , 1868.)	
Chalk of Faxoe, Denmark	Danien	Ober Kreide.	Maestrichter Kreide.
UPPER CHALK. Chalk Rock at base)	Sénonien	Ober Kreide.	Weisse Kreide.
MIDDLE CHALK. (Melbourn Rock at base)	Turonien	Mittlere Kreide.	Gosaugebilde.
LOWER CHALK. (Marl of <i>belemnitella plena</i> White Chalk Grey Chalk Chalk Marl Chloritic Marl)	Cénomani- en	Unter Kreide.	Chloritische Kreide.
Upper Greensand		Untere Kreide.	Grünsand. Pläner.
Gault	Albien		Gault.

(part of.)

S. J. Mackie divided the Chalk of Dover into "Upper White Chalk with flints," "Middle White Chalk," and "Grey Chalk,"* in 1863; and Prestwich into "Upper or White Chalk" and "Lower or Grey Chalk," in 1874,† his boundary being 40 feet above the base of the Melbourn Rock. The ultimate base of the Chalk Water System is the Gault, but before this base is reached there are many false bottoms, which form spring-planes.

My knowledge of the hydrogeology of the country between Lympe and Dover is derived from surveys

* *Geologist*, August, 1863.

† St. Margaret's Bay Trial Boring for Channel Tunnel (*Proc. Inst. C.E.*, 1874).

made by me in 1865, 1878, 1893, and 1898, and from measurements by Mr. Price in 1874, Mr. Hill and Mr. Curry of Dover in 1886, and Mr. Stilgoe in 1898.

The Dover Basin, deeply scored in the Upper and Middle Chalk, comprises four tributary valleys falling roughly from south-west to north-east into the principal valley of the River Dour, which is dry above Great Watersend, $104\cdot25' + \text{O.D.}$, where the river rises. There is also a lateral source at Chilton, or Bushey Rough Springs in the Alkham Valley, occasionally supplemented by the Nailbourne, known as the Drellingore, which rises in wet seasons as far up the Alkham Valley as Lower Standen. In its descent from Watersend the River Dour, including the Pent, traverses the whole thickness of the Middle Chalk, which throws out fingers up the Alkham and Poulton Valleys and the bifurcated Hougham Valley, and also occupies the Aycliff Valley, which falls from Abbot's Cliff behind Shakespeare's Cliff to Wellard's Way, where it is cut off at the height of $115' + \text{O.D.}$ by the cliff.

THE UPPER CHALK.

Excepting perhaps a narrow strip in the Paddlesworth-Lyddon Valley, the Upper Chalk occupies the Dover Basin southwards as far as the outcrop of the Chalk Rock from Ellington along the north-west side of the Alkham Valley to Little Watersend, and thence to the cliff beneath Dover Castle.

South of the Alkham and Dour Valleys it forms the ridges between Folkestone Hill and River, and as far south as the Hougham Valley, in one many-fingered outlier. South of this there are four outliers, viz. Abbot's Cliff West, where a line might be dropped to

the Gault; Abbot's Cliff East, which runs to Dover; Round Down; and Shakespeare's Cliff.

The CHALK ROCK is seen at many places inland, and in the cliffs. I give a sketch I made of it at the top of the cliff at Round Down, looking on the Channel Tunnel and coal shafts on the Great Fall below. The highest flint-line is that taken as the top of the zone of *Holaster planus* and of the Middle Chalk. It is about 12 feet above the Chalk Rock and 242 feet above the base of the Melbourn.

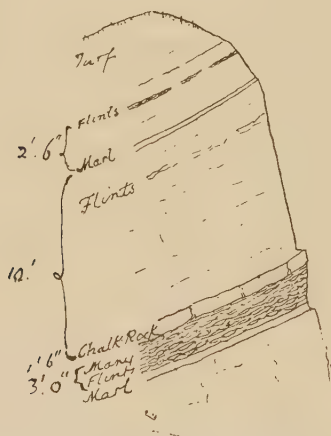


FIG. 1.—THE CHALK ROCK AT ROUND DOWN.

Along the coast-line the Chalk Rock falls from 500' + O.D. at Folkestone Hill to sea level at the south point of St. Margaret's Bay. It may be taken as 440 feet at Abbot's Cliff half-way between the houses; 404 feet at Lydden Spout; 282 feet at the summit of Shakespeare's Cliff; 135 feet on the Dover side of the Castle; and (at 230 feet above the base of the Melbourn) + 83 feet at the Convict Prison, and - 39

feet in the Channel Tunnel trial boring at St. Margaret's Bay.

There is no barrier to the descent of water in the Upper Chalk until the base of the Chalk Rock is reached. Here are certain bands of marl, which form a spring-plane that serves several wells sunk to the Chalk Rock.

North-east and north-west of the Dour Basin the subterranean boundary water-ridge is turned by the Chalk Rock; that is to say, the water in the Upper Chalk rises by a gently inclined and corrugated plane from the direction of Deal and Sandwich till it abuts upon the more steeply inclined plane of the Chalk Rock, through which it cuts and cascades towards the Dour and the sea south of St. Margaret's Bay. Along the line of intersection of the two planes the water-ridge is well defined. From the Dour where it enters the Pent the boundary through Middle Chalk is slightly defined till we reach a point a little north-west of Broadlees Farm, whence it is sharply defined to Frith Farm and Old Farm, still in Middle Chalk; thence it runs a little south of Whitfield Farm, where it is above the Chalk Rock. Thence to Temple Farm (unsurveyed towards Coldred Street and Bosfield) and so round to St. John's, where it is above the Chalk Rock. It is probably so all the way round from Whitfield, as the wells at Whitfield Farm, Temple, Captain's Wood, Wickham Bushes, Swanton, and St. John's are all sunk to the Chalk Rock.

Outside the Dour Basin, the northerly continuation of the boundary of the water above the Chalk Rock runs from Whitfield Farm south of Whitfield, Pineham, and East Langdon (at all of which places the bottoms of the wells are at or above the Chalk Rock) to the outcrop of the latter at sea level south of St. Margaret's Bay.

THE MIDDLE CHALK AND DOVER HARROUR.

THE MIDDLE CHALK consists of three members—the hard chalk of *Holaster planus* at top, 20 feet thick below the Chalk Rock; the weak floury chalk of *Terebratulina gracilis*, 140 feet thick; and the chalk with nodular bands, 31 feet, resting on the Melbourn Rock, 39 feet thick; in all 230 feet from base to base of the two rocks. It preserves a remarkably uniform thickness of 230 feet from Devizes to Suffolk, and through Surrey to Dover. With the exception of two thin marl bands in the zone of *Terebratulina gracilis* about 35 feet and 38 feet 3 inches to 39 feet below the Chalk Rock, the lower of which holds up the water in the well at St. Radigund's Abbey, there is no barrier to the descent of water through the Middle Chalk from the Chalk Rock to the base of the Melbourn Rock, where it is upheld by the marl bed of *Belemnitella plena*, the highest member of the Lower Chalk. (See Figs. 2 and 3.)

The Melbourn Rock consists of enormous cubical and oblong blocks divided by fissures, quite or nearly perpendicular to the plane of the bedding. The Warren (which is a vast slip on the Gault until that disappears below sea where the slips end under Abbot's Cliff) and the fore-shore to the east are strewn with enormous blocks of Melbourn Rock, and in the face of the cliff the dividing fissures may be plainly seen. It formed the formerly projecting nose of Shakespeare's Cliff, of which I give a view (Fig. 2), taken in 1863, showing the whole of the Middle Chalk with the marl below the Melbourn Rock, the White Chalk below that, and part of the Grey Chalk. Its characters may be studied at ease at the Warren, at

Akers's Steps, Ayeliff, and from the beach at the foot of Wellard's Way (shown on Fig. 2), where it is seen to be



FIG. 2.—SHAKESPEARE'S CLIFF, 1863.

a silicious light buff-coloured rock (the best of which will not whiten the fingers) full of darker buff and greenish nodules for a thickness of about 30 feet, the bottom 10 or "12 feet being certainly whiter than the hard "yellowish nodular rock which forms the next 20 feet" at Akers's Steps (Hill). Here the rocky character ends, but according to Mr. Hill the nodular character extends in layers to 70 feet (though on the drawing he shows it to 78 feet) above the base of the Melbourn Rock at Akers's Steps. The boring at St. Margaret's Bay shows "yellow chalk 4 feet thick," at 67 to 71 feet above the same horizon.

A buff-coloured rock, closely resembling the smooth parts of the Melbourn rock, runs down both sides of the Alkham Valley as far as the vicarage, where it passes beneath the bed. The first Folkestone well, sunk in 1898 at Lower Standen, went 70 feet to a rock, through which it passed for 20 feet. A sample from the bottom was like Melbourn. This well started some 7 feet

below the buff rock, which is therefore 97 feet above the base of the Melbourn.

The Melbourn Rock falls below the sea level near the South Eastern Railway Station at Dover, and is the bed described as "rocky yellow chalk, no flints, 39 feet "thick," met with at the depth of 395' to 434' (= -108·05' to -147·05' O.D.) in the Convict Prison Well, East Cliff, Dover, where the marl beneath is given as 14 feet thick; and again is that described, with reference to the change of colour, as:

Grey Chalk 30 feet

White Chalk 10 feet

met with at the depth of 249 to 289 feet, or (assuming 20' + O.D. for the ground level) - 229' to - 269 O.D., and resting upon a bed described as "blue marl, 11 feet "thick," in the trial boring for the Channel Tunnel at St. Margaret's Bay, 1874.

It never comes to the surface in the Dover Basin, but the marl beneath it forms a false bottom, which upholds the greater part of the water that sinks into the chalk from the rainfall on that basin. This is an important spring-plane, for, besides others, all the wells in the Alkham Valley from Lower Standen to Alkham Vicarage are sunk to the base of or into this rock (except the Folkestone Well at Lower Standen mentioned above, which goes deeper). The point at which the Melbourn Rock passes beneath the sea therefore determined the point at which the water in the chalk above it, rejected by the Chalk Rock to the north, was to escape into the sea, and the site of Dover Harbour—whose Basin is partly in the weak chalk of *Terebratulina gracilis*, upon which the "Eastern Arm" rests starting from the Lord Warden, about half the Admiralty and the Prince of Wales's piers should have for their foundations the

39 feet of Melbourn Rock, upon which rests all except the southern and northern ends of the "southern break-water." South of the bend in the old Admiralty Pier, the foundations, including those of the easterly extension, must be the marl and the White Chalk below the Melbourn.

The subterranean boundary water-ridge of the Dour Basin, which we left at St. John's, above the Chalk Rock, must continue (though unsurveyed) through Middle Chalk (perhaps in this part of its course drawing somewhat upon the basin of the Little Stour) until turned by the Melbourn Rock south of Paddlesworth, where the well at Elvington Farm is sunk to the Melbourn Rock. The subterranean Dover Basin is duplex, comprising the area under-draining towards the Dour, which I make approximately 17·6 square miles, and that under-draining towards the Pent, 44 square miles—which consequently contributes nothing towards the Dour. Part of the surface or apparent area drains elsewhere; as the surface of the water-system rises by an inclined plane till it abuts upon the plane of the marl beneath the Melbourn Rock, when it cuts through the marl and cascades through the Lower Chalk towards the springs of the Folkestone Basin and the sea coast. Between Dover and Folkestone Hill, where the Lower Chalk intervenes, the greatest breadth of the belt in which the chalk water drains towards the sea is one mile at Hougham, opposite Lydden Spout. In the Upper Chalk area between Dover and St. Margaret's Bay, where the Middle Chalk intervenes, the greatest width of flow towards the sea direct is $1\frac{1}{2}$ mile at Frith Farm.

The subterranean basin has a system of water-ridges and water-valleys independent of the ridges and valleys

of the surface. Their form and position, when the water in the chalk was low, are shown by contour lines drawn from altitudes determined by H. E. Stilgoe, C.E. (then borough engineer of Dover, now of Birmingham) and myself in March, April, and May, 1898. These contours were laid down on the surface of the water at 10 feet intervals up to 300' + O.D. generally, but at Lydden and Alkham at 1 foot intervals.

The subterranean water-ridge bounding the basin from Elvington where it is turned by the Melbourn Rock runs through Lower Chalk south of Combe Farm, where it is turned by the marl at the top of the Grey Chalk, 40 feet below the Melbourn, to Hope Farm, where it rises above the Melbourn, thence by Coldham to a point midway between Satmar and St. Mary's Church, where it branches—the area between the branches under-draining towards the Pent.

The northern branch runs through Middle Chalk a little east of north to Maggot Farm Cottages, then curves midway between Wolverton and St. Radigund's, round under River Bottom Wood, a little east of Combe Farm, just south of the workhouse, through Tower Hamlets to the point where the Dour enters the Pent.

The south branch strikes east, a little south of West Hougham, curving north of Hougham Church to Elms Park, where it turns through Farthingloe south of the Citadel Well to the Lord Warden.

Some engineers rely on 3·5 inches per annum percolation as a minimum. For those who do, 3·5 inches on 17·6 square miles gives exactly * 2,443,484 gallons per 24 hours due to the Dour at the point where it enters

At 3·5 inches per annum, area in square miles $\times$ 0·14, gives millions of gallons per 24 hours, nearly enough, *e.g.* $17\cdot6 \times 0\cdot14 = 2\cdot464 = 2,464,000$.

the Pent. This in a dry season must be shared between Folkestone, Dover, and all the private wells in the basin, and the Dour.

Three internal water-valleys lying within a fan-shaped area meet at Lower Standen, one from beyond Killing Wood near Uphill, through Hawkinge to Lower Standen; the second from Combe Farm to Lower Standen; and the third from the point at which the water-ridge branches midway between Satmar and St. Mary's Church, through Hockley Sole to the line of the Nailbourne at Drellingore Hole. The area of the subterranean basin above the first Folkestone well at Lower Standen is 2·4 square miles, which at 3·5 inches per annum gives exactly 333,000 gallons per 24 hours, or 138,750 gallons in 10 hours' pumping. They have laid a 20-inch main capable at 3 feet per second of carrying 3,487,200 gallons per 24 hours, and 1,453,330 gallons in 10 hours.

Another branch water valley falls from the west across and beneath the Paddlesworth-Lydden Valley through Reinden Wood and Everden Wood under the surface ridge to the line of the Nailbourne at South Alkham, and a strong water-ridge runs from beyond Everden Farm through Pimlico and Church Alkham Village (where it can be contoured to every foot for 5 feet vertical intervals) and dies out between two water valleys a little north-east of Church Alkham. A sharply defined water valley runs south-east from Smersole to Beard's Hole across and beneath the Lydden Valley, passing under the surface ridge a little north of Ellinge, and strikes in the direction of Chilton and Bushey Rough Springs. Between Ellinge and Chilton it receives a branch water valley crossing under the Lydden Valley from North Court. A well-defined water-ridge runs

from Swanton across the Lydden Valley to Little London and on to the junction of the two branches of the Dour at Kearsney; so that between this water-ridge and the one through Everden, Pimlico, and Alkham there is a well-defined subterranean basin draining from Smersole under the Lydden Valley, and the high ground of Lord's Wood and the Minnis, to Chilton and Bushey Rough Springs. The areas so proved to underdrain to the Alkham Valley subtract the greater part of the area relied upon for the supply of the Lydden Well of the Folkestone Company.

Another water-valley runs through Wickham Bushes south-east under the Lydden Valley in which the Folkestone well was to be sunk, along the south side of Lydden to Little Watersend, where it receives yet another branch water-valley from the north, which runs with it through Woodville to the spring head of the River Dour at Watersend, $104\cdot25' + \text{O.D.}$ It is possible therefore that the wells of the Folkestone Company have not been able to obtain so much water as was expected, or to do Dover so much injury as was feared.

THE DRELLINGORE.

The bed of the Alkham Valley is dry above Chilton Spring $106' + \text{O.D.}$, except when the Drellingore is flowing down the valley. The Nailbourne (which proves a variation in altitude of the water of about 90 feet at Lower Standen, where the water level in the well was $165\cdot20' + \text{O.D.}$, March 4, 1898) rose at its highest source, under the barn there, at about $255' + \text{O.D.}$, three times between 1852 and 1898, the last of these being early in 1877. Between Chilton Spring and Lower Standen there are at least five depressions in the

bed of the valley, viz. at Chilton Farm, Wolverton, Church Alkham, South Alkham, and Drellingore Hole.

The rising of the bourne is first noticed in what is sometimes a dry pond opposite the house at Chilton Farm. The water in the wells goes on rising till those near the bed of the valley are nearly or quite full. Six weeks after the rise at Chilton the water rises in Drellingore Hole, which is a deep oval depression in a grass field, the bottom of which I found to be $214\cdot41' + \text{O.D.}$, 61 feet above the water in the well close by. When it overflows there is a pond two acres in area and about 12 feet deep.

At South Alkham Bridge there is a similar depression in the dry bed of the valley, whose bottom I found to be $197\cdot53' + \text{O.D.}$, with 4 feet to overflow, and a little pond with stagnant water $197\cdot06' + \text{O.D.}$, and 52 feet above the water in the wells close by. At Church Alkham there was some stagnant water in the hole, $177\cdot14' + \text{O.D.}$, about 56 feet above the water in the wells, this proving the water line to fall faster than the bed of the valley between the Alkhams. At Wolverton, where the water sometimes rises in the hollow without flowing down the valley, the fall was across under the valley from north-west to south-east, April 5, 1898.

The Nailbourne rises much more frequently at Drellingore than at Lower Standen, viz. in 1877 and each year until 1883, when it broke out twice. According to Mr. Alfred Stanley, on the 30th November, 1880, the Drellingore rose, and ran till after March, 1881, but only to Wolverton, where it sank; and again from 20th February to April, 1884. It did not run again until 1888, when General Field read a paper on the subject at the Dover Field Club (April, 1888). It ran again in 1889, and in 1893 a little in January, and

again from March 1st to April 1st. The water was up in Drellingore Hole in January, 1895, without overflowing, but ran again in 1896.

It is therefore to be noted that the water frequently rises in Drellingore Hole and at Wolverton without overflowing, and that there are several points in the bed of the valley to which it sometimes runs and then sinks, the lowest of these being at Wolverton. The water-contours show that the water as far down as Wolverton, when the Drellingore is not running, comes from the Reinden Wood basin and the area within the water-ridge south of the Everden-Pimlico-Alkham water-ridge, after which it runs east under River Minnis to Dover. When the Drellingore sinks at Wolverton it does the same underground.

The water at Chilton Spring, south of the road which was flowing 122,905 gallons per 24 hours when the Drellingore was not running, April 5, 1898, comes from Smersole and the subterranean water basin between the Everden-Pimlico-Alkham and Swanton-Little London-Kearsney water-ridges.

As to the volume of the Drellingore, General Field's own figures $2\frac{1}{2}$ feet wide by 3 inches deep, and his lowest velocity three miles an hour, give 61,677 gallons per hour and 1,480,248 gallons per 24 hours, and not 17,000 gallons per hour or 407,376 per diem, as given by him in the Paper (Dover Field Club, 1888) quoted by Mr. Stilgoe in an affidavit filed 31st March, 1898.

THE LOWER CHALK AND THE CHANNEL TUNNEL.

The thickness of the Lower Chalk from the Melbourn Rock to the Gault remains about the same, 254 or 255 feet through Wilts, Berks, Oxon, Hertfordshire, as it is

at the Convict Prison, Dover, 241 feet, and the boring at St. Margaret's Bay 259 feet, but is differently made up, the Upper Greensand changing progressively downwards from west to east until it thins out altogether. At the site of the pits at Great Fall it is only 220 (*i.e.* height of base of Melbourn + O.D. + depth to Gault - O.D. $106' + 113' 9'' = 219' 9''$), and at Folkestone only 200.

Geological Section at Great Fall.				At Sangatte.	
	Boring.	Shafts.		Shaft.	
		Dawkins.	Fox's Report.		
"Lower or Grey Chalk"	91' {	Mouth 52'0 + O.D.	87' {	80' {	
Chalk Marl } 47 { 39' 8' } 138'0		Tumble 40'0 } 58'11	34 { 23' 11' } 121	39'6 { 29' 10'6 } 119'6	
Chloritic Marl }		Beach 18'11			
Gault .	121 . .	165'9			
Lower Greensand .	124 . .	136'3			
Wealden .	94 . .	123'8			
Jurassic { Oolites . . .		86'10			
{ Lias . . .		600'0			
Carboniferous .		37'0 } 637'			

The highest member of the Lower Chalk is the marl beneath the Melbourn Rock, 4, 8, 11, 14 feet thick, which rests upon massive snow-white chalk 40 to 42 feet thick, which is called "pipeclay" in the St. Margaret's boring. At its base is a bed of yellow chalk, distinctively recognisable. At the Misswell at Tring it is a yellow chalk and ragstone 5 feet thick. At the Warren it rests upon a bed of grey marl (the top of the Grey Chalk) which forms a spring-plane to which several wells are sunk. Beneath this comes the Grey Chalk proper, conspicuously streaked with marl bands in the cliffs (see Fig. 3). Inland it is 40 feet thick, and has the Totternhoe Stone at its base. Here also it has a stony base and about the same thickness.

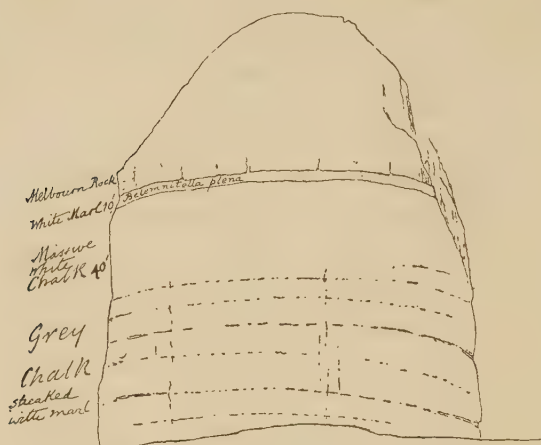


FIG. 3.

Fig. 3 shows junction of Middle and Lower Chalk at Abbot's Cliff just under $\frac{1}{4}$ mile west of Lydden Spout. The view is much foreshortened, as the base of the Melbourn Rock must be about 180 feet above O.D.

BEDS BETWEEN THE GREY CHALK PROPER AND THE CHALK MARL.

There is a series of beds which pass as Grey Chalk at Dover, but are classed as Chalk Marl far inland, consisting of soft marls alternating with indurated layers, and stone bands, and hard chalks weathering white. From the base of the Melbourn Rock to the Chalk Marl is 196 and 211 feet, and from the base of the Grey Chalk to the Chalk Marl 106 and 121 feet respectively, at the Convict Prison and St. Margaret's Bay. It is this series that thins between St. Margaret's and Folkestone.

Lydden Spout issues about 15 feet above the shore, say $26' + \text{O.D.}^*$ Here the Lower Chalk may be

* The range of the tide at Dover is about 22 feet.

taken at 200 feet thick and the Chalk Marl at 46 feet, which makes the base of the Melbourn Rock 154 feet above the Chalk Marl. At that point the base of the Melbourn Rock is about $174' + \text{O.D.}$, which makes Lydden Spout about 148 feet below the Melbourn and 6 feet above the Chalk Marl. The principal spring bed at the outcrop on the Folkestone side consists of two rocks, the lower marl rock 4 feet thick, on which is marl 3 feet under the upper marl rock 3 feet, lying between 117 and 127 feet below the base of the Melbourn Rock. From the base of the lower issues the spring at the targets in the Horseshoe, Castle Hill, Folkestone, and from the upper the spring-head at St. Thomas's Well, where the pond conceals the lower; also probably the springs at Cherry Gardens Water Works, so that these marl rocks form a very important spring plane. The water at Lydden Spout issues about 21 feet below the lower rock, but it has no doubt found a fissure or cut a sloping channel to its outlet. The height of the cliff there is about 450 feet; of the Chalk Rock $404' + \text{O.D.}$

In 1898 I estimated that if the first Folkestone Well at Lower Standen were sunk the projected 200 feet it would reach within 7 feet of the upper rock.

The shafts at Great Fall starting at $52' + \text{O.D.}$ pass through 40 feet of fallen chalk and 18 feet 11 inches of beach, in all 58 feet 11 inches, before reaching solid ground at $-6' 11'' \text{ O.D.}$, and at 59 feet 10 inches above the Chalk Marl. Taking the height of the base of the Melbourn at $106' + \text{O.D.}$, we get that of the base of the Grey Chalk proper (if it were present) at $16' + \text{O.D.}$, so that they entered solid ground 22 feet 11 inches below it, and 4 feet above the higher of the two marl rock beds.

This brings us to the chalk marl proper, about which

all are agreed. Allowing it to include 8 to 11 feet of chloritic marl and the uniformly 3 feet thick bed of dark greensand at its base, it is 46 feet thick at its outcrop, 47 in the Great Fall pits, 45 at the Convict Prison, and 48 feet at St. Margaret's. The highest 11 feet 6 inches, consist of alternate bands of soft and indurated marl or stone, below which it consists of two 10-foot marl beds, only separated by a stone bed 1 foot 3 inches thick at St. Margaret's. I have no doubt this, or part of it, is the conspicuous marl band 20 feet above the shore under Abbot's Cliff houses, which at the end of the slips runs above the only point where you can stand on the top of the Gault and look up the cliff over the Lower and Middle Chalk to the Chalk Rock.

THE GAULT.

Beneath the chloritic marl and dark greensand, which form a dark belt on the fields south-west of Castle Hill, Folkestone, there are light grey sandy shales, all of which are seen in the road section there. The greensand is the same as that called Upper Greensand at the top of Copt Point by Mr. Price, who measured the Gault below. He found the light grey beds to consist of 17 feet 6 inches of pale grey marl, resting on 3 feet 3 inches of dark greensand, and that on 35 feet 6 inches of pale grey marl, that on 5 feet 1 inch of pale grey marl, which with 9 feet 4½ inches for the *Ammonites Varicosus* bed (not described) makes up 70 feet 8½ inches as the thickness of the light grey beds, now called Upper Gault. This is given as 48 feet in the Great Fall boring.

Their light grey colour stands out from the dark blue-black Gault clay below, which is measured as 28 feet 7 inches at Copt Point, and as 70 feet at Great

Fall boring. This makes the thickness of the Gault 99 feet $3\frac{1}{2}$ inches at Copt Point, Folkestone, and 121 feet at Great Fall; or 136 feet 3 inches, according to Mr. Dawkins, in the shafts. From the base of the grey beds a line of springs marks the spring-plane which forms the ultimate base of the Chalk Water system.

The tunnel is shown on the section attached to Messrs. Fox's Report at about 97' or 98' to 125' or 126' or so — O.D. at the Great Fall Shaft, where the base of the chloritic marl and top of the Gault is — 113' 9" O.D., so that the tunnel must be there cut through 11 or 12 feet of the light grey marls of the Upper Gault, and 16 or 17 feet of chloritic and chalk marl.

In driving east before striking south-east across the Channel, the section shows that the top of the tunnel would not encounter the lower marl rock until the sixth mile from the shaft and one mile outside the three-mile limit, where the Melbourn rock forms a bank in the Channel bed. That would be the crucial point, and test all the resources of engineering. About the seventh mile the dangerous horizon of the base of the Grey Chalk proper would by the section strike the top of the tunnel and fall to its bottom by the eighth mile. After that the section shows the tunnel safe in the Grey Chalk for some two or three miles, where I leave it, as if the tunnel ever got as far as that it would get all the way. But all the dangers do not lie in the submarine tunnel itself. In the Approach Railway No. 1 it would cut through all the spring planes up to that of the Melbourn Rock, the worst of all, which would be entered from below about 40' + O.D., at from $\frac{1}{3}$ to $\frac{1}{2}$ a mile from the tunnel mouth at Maxton.

The drainage heading is shown at a depth of 350' — O.D. with a sump reaching to nearly 375' — O.D. No

geological information is given on the section below the Upper Gault — 180' O.D., but according to Dawkins the Gault is bottomed at — 250' O.D. and the Lower Greensand at 373' 8". It must therefore pass through the several beds of Lower Greensand in its rise towards the tunnel for at least the first 2 miles; so that this very heading, which is intended to drain the tunnel, may prove to be a feeder. I bored through Lower Greensand $\frac{1}{4}$ mile from the sea at Tontine Street, Folkestone, in 1878, and the water reached was as salt as brine. The geology of the Approach Railway No. 1, shown on Fox's section between the shaft and Maxton Station, will be found to differ materially from the facts, as under the tunnel entrance at Maxton I estimate the base of the Melbourn Rock at about O.D., showing a nett fall of 106 feet from the shaft instead of a nett rise of 100 feet in the strata as shown on the section, for they rise and fall again.

It therefore abundantly appears that the captivating title "Grey Chalk" with its particular description, "A "compact impervious stratum of greyish coloured chalk "containing no flints and so far as can be ascertained "free from fissures and slides," does not apply to the beds in which the company's own section shows the tunnel and drainage heading, not even though this description is reinforced by the assurance that "it is in "this bed of chalk that it is proposed to construct the "tunnel as being a most excellent material in which to "work, and one which possesses the peculiar property "of gradually puddling itself and becoming impervious." (Messrs. Fox's Report, January 1, 1907.)

THE EAST KENT COAL FIELD.

If I knew who first suggested that a continuation of the Belgian and North French coalfields might be found

by boring through the Secondary rocks in South-east England, I would do him all honour. From page 12 of a Paper by W. Taylor, *On the Probability of finding Coal in the South-east of England* (Reigate, 1886, 8vo.), I learn that in the Introduction to Dunn's *Winning and Working Coal*, published 1848, at page 19, the following words occur: "Although chalk in Britain is always considered most remote from any connection with coal strata, yet it prevails to a great extent over the coal fields of Belgium, and especially in the district of Mons, where the Grand Hornue Colliery is sunk through 210 feet of chalk. On its course westward it increases in thickness, and it has been proved to the depth of 400 feet. There is reason to believe that this chalk continues to thicken until it exhibits itself in the cliffs upon the coasts of France and Belgium, and there is no reason to doubt that it is continuous to the cliffs of Dover, and if so it raised the very curious and important question as to whether or not the carboniferous coalfields of Belgium exist under the similar Chalk formation of Britain."

Hitherto Godwin Austen has had the credit of originality which clearly belongs to Mr. Dunn until some older claimant turns up, for I cannot suppose that the suggestion made by Sir Henry de la Beche two years before (*Geological Survey Memoirs*, i. 214, 1846, 8vo.) is that referred to by the past tense "raised," viz. "many a mass of coal measures may be buried beneath the oolites and cretaceous rocks on the east, the remains of a great sheet of these accumulations connecting the districts we have noticed [coal fields of West of England] with those of Central England and of Belgium, &c."

Geology, following a wrong scent, had sought the continuation of the Valenciennes coal-basin in the direc-

tion of Arras, which a chance boring for water in 1847 discovered at Oignies, near Carvin-Epinoy, bending in the direction of Douai, and pointing therefore to Calais and Dover. It was undoubtedly this discovery that "raised" the question whether it would cross into England, and Dunn is the first author that I have heard of who records it. Godwin Austen's line from the Bristol coal-field to Belgium is merely a tangent to the curve commencing at Dortmund and passing through Aix-la-Chapelle, Liège, Namur, Charleroi, Mons, Valenciennes, Douai, Béthune, Hardingen, Dover, and Harwich—the real line of strike. In my report to Lieut.-Col. W. G. Dawkins, "On the prospect of finding "Coal on the Estate of Over Norton, Oxfordshire" (1891, 8vo, page 8), I remarked: "I shall not recapitulate any "of the theories of the older geologists, because many "deep borings made since their promulgation have "proved them to be unsound." . . . "A Silurian axis "is therefore proved to cross in some northerly and "southerly direction through Ware, east of which the "Devonian and Carboniferous come on in their turn. "Bearing in view the Cambrian Rocks of Charnwood "Forest and the Yorkshire coalfields, taken with the "South Scarle (Lincs.), Harwich, and Dover borings, the "evidence is strongly in favour of a north-west and "south-east direction for the direction of the Ware anti-clinal. This proves the continuation of the Belgian "coal basin to make a great bend and turn north-west "and along the Eastern Counties to the Yorkshire coal-field, and not, as formerly supposed, to run across to "the Bristol coalfield."

The Brabourne boring, which, starting in Gault, passed from Trias or New Red into Devonian or Old Red Sandstone at a depth of 921 feet 5 inches proves the correctness of this view still more conclusively. Godwin

Austen still has his followers, but, judged by Brabourne, the unfinished borings at Ottinge, Hothfield, and Old Soar north of Tonbridge, will all, if ever finished, prove a negative. The Brabourne boring, taken with the London and Ware borings and the Harwich boring, gives an approximate western boundary curve through (say) Abbot's Cliff, Canterbury, and Colchester.

The results of the borings and shafts described by Professor W. Boyd Dawkins ("The Discovery of the South-eastern Coalfield," *Journ. Soc. Arts.*, vol. lv. p. 450, 1907) are summarised as regards depths in feet and inches thus:

	Ground.	Coal Measures touched.		Penetrated to.	Thickness.
	+ O.D.	From Surface.	-- O.D.	-- O.D.	
Great Fall, Dover :					
Bore .	—	—	1,100·6	2,274·0	1,173·6
Pits	52·0	1,149·6	1,097·6		
Ellinge .	400·4	1,686·4	1,286·0	1,415·4	129·4
Ropersole .	400·0	1,580·9	1,180·9	1,729·0	548·3
Waldershare	325·0	1,394·0	1,069·0	1,945·	} Still pro- gressing March, 1907.
				(Mar. 1907)	
				1,185·4	
Fredville .	259·6	1,368·6	1,109·0	(Mar. 1907)	

Mr. Dawkins gives:

		Gross Thickness
Dover	13 beds in Pennant Grit,	22' 6"
Ropersole	12 " " " "	thin
Waldershare	4 beds in Lower Shale Series,	10' 3"
Fredville	3 " " " " "	7' 0"

Lastly, Mr. Dawkins finds the Kent Coal basin, consisting of Pennant and Lower Coal Measures, to lie in a "trough" which "passes from Dover to the north-west "making for Canterbury," which completely proves the

correctness of the view expressed in my report to Colonel Dawkins in January, 1891. Along the Dortmund-Dover-Harwich curve the coalfields lie in long narrow detached troughs, some of them in places folded nearly upside down.

Mr. A. T. WALMISLEY (Fellow) said he had much pleasure in proposing a vote of thanks to Mr. Lucas for the very interesting, scientific, and practical Paper he had read, and for the care he must have bestowed on its preparation. The subject was an exceedingly interesting one, and its importance to all concerned in the welfare of Dover could hardly be overrated.

The Paper was one which would amply repay careful perusal at leisure, and would, he was sure, form a valuable record as part of the *Transactions* of The Institution.

Mr. J. GANDY (Fellow) said he had very great pleasure in seconding the vote of thanks to Mr. Lucas for his Paper, which was certainly one of more than purely local interest.

Mr. MALCOLM BURR (Visitor), speaking as resident engineer to the Kent Coal Concessions, stated that during the last two years a great deal of work had been done in East Kent which threw much light on the subterranean extension of the zones of the chalk and on the position of the coalfield. He referred to the numerous borings and especially to the three sinkings now in progress in the area between Dover, Canterbury, and Sandwich.

The evidence obtainable from the sinkings was infinitely more valuable than that from the borings, for the latter only gave a small amount of core, often in a fragmentary condition, whereas from the sinkings cart-loads of material were available.

With regard to the chalk, the ultimate criterion for the discrimination of the different beds was, as he was sure Mr. Lucas would agree, proved by their fossil contents. The difficult subject of the paleontology of the chalk had been worked out in minute detail by Dr. Arthur Rowe, who had given the zoning of the chalk the status of an exact science. With Dr. Rowe's advice and assistance he had been able to delineate with remarkable accuracy the zones as passed through in the different pits.

While admitting that the physical nature of the chalk was of great value for a preliminary diagnosis, experience in the pits had taught that any given bed was very different in appearance, when freshly brought up from a great depth, from that same bed where exposed to weathering on the surface, and he had learned to place little faith on purely physical characteristics for the working out of the different beds in the pits. Mr. Lucas had referred to "certain bands of marl," which formed the spring plane underneath the base of the Upper Chalk. These well-known marl bands in the upper part of the zone of *Terebratulina gracilis* were well known to the sinkers, as the intervening chalk was compact and dry, but the marl bands invariably threw out feeders.

The top marl band, which lay between two pairs of strong beds of flints, was a convenient land-mark to separate the zone of *Holaster planus*, the base of the Upper Chalk, from that of *Terebratulina gracilis*, the top of Middle Chalk. With regard to the Melbourn Rock, in Kent one was accustomed to refer to it as the Grit Bed, using the name employed by Mr. Price in his Paper on the Chalk of Folkestone. This Grit Bed was easily recognisable in the pits and was exceedingly hard. Though normally dry, it was found to sweat after

exposure, and in some headings driven about that horizon in the pit at Tilmanstone Colliery the Grit Bed by sweating had filled the trench in the underlying chalk of *Holaster subglobosus*, and not a drop of this water had run away, showing that the latter-mentioned chalk was absolutely waterproof.

The Glauconitic Marl, formerly incorrectly identified with the Upper Greensand, was not persistent inland, as one would naturally anticipate from the weakness of its outcrop, but oddly enough it turned up again at a boring 10 miles from Dover.

He deprecated the use of the terms Lower Chalk, Grey Chalk, and Chalk Marl, frequently used by different authors with a different significance. It was far more satisfactory to employ the exact scientific names of the zones—*Holaster subglobosus*, and *Ammonites varians*, which together formed the Cenomanian.

The alternate bands of soft and indurated marl or stone at the base of the zone of *Ammonites varians* were persistent at Tilmanstone. The hard bands were characterised by the abundance of the sponge *Plocoscyphia labrosa*. The Gault appeared to thicken out inland. Although only about 100 feet thick at Folkestone, it was 136 feet in the Dover Pits, at the Ellinge Boring 184 feet, 156 feet at Waldershare, 148 feet at Fredville, and of still greater thickness in some of the other borings.

In the pits the Upper Gault preserved its firm and marly character, but the Lower Gault beneath the *Inoceramus* bed was black, soapy, and bad sinking ground.

With regard to the coalfield, the claim of Dunn to be the first to suggest the presence of coal beneath chalk in this country cannot seriously compete with that of Godwin Austen, for his claim was based on no logical

sequence of thought; from the mere fact that coal is worked beneath chalk in parts of Belgium and France, it did not follow that there was direct connection between the coal and the chalk. If there were, why had not pits been sunk on Salisbury Plain or at Norwich? Godwin Austen, on the other hand, employed sound logical sequence of thought, and his title stood as yet unchallenged.

The boring for water at Oignies by Mulot in 1847, led to the discovery of the coalfield of the Pas-de-Calais; and the rapid development of that great source of national wealth was an object lesson to Englishmen who had allowed the Kentish coalfield to lie neglected and deserted for so many years. Fifty years ago the Pas-de-Calais was an agricultural desert, but now it was the wealthiest and most densely populated department in France.

It was claimed by Mr. Lucas that the striking of the Devonian at Brabourne at a great depth proved that the Coal Basin swept round towards the north. But the facts were equally available to prove a totally opposite theory. Why could not the anticline proved at Brabourne be the southern boundary of the coalfield, and why could not the carboniferous basin continue in its trough to the north of Brabourne towards the west? He failed to see how the Brabourne boring did anything else than support the view of Godwin Austen.

Reference had been made to the Paper by Professor Boyd-Dawkins in the *Journal of the Society of Arts*, 1907, but the conclusions drawn in that Paper had been vitiated by later information. About that time the company severed its connection with Professor Boyd-Dawkins and the information supplied by the borings of Waldershare and Fredville had been immensely amplified by the deep borings at Goodnestone, Barfrestone, and Woodnes-

borough. Professor Boyd-Dawkins had little material for determining any horizon in the coal measures, and it was since that date that Mr. Newell Arber, Demonstrator in Paleobotany at Cambridge, a recognised authority on carboniferous plant remains, had examined all the cores available, had broken them up from end to end, had obtained a rich and varied flora, and determined the horizon of the coal measures with accuracy. He had, in fact, proved in a report, not yet published, that these coal measures were to be referred to the transitional series. Mr. Arber's report would be published in due course, with records and geological information concerning the deep borings of Goodnestone, Barfrestone, and Woodnesborough. The result of the sinkings at the Guildford, Tilmanstone, and Snowdown Collieries would be made public in due course, but at present the moment had not yet come, as the inquiry was not completed.

Mr. Burr handed to the President a specimen of coal recently won from one of the borings a few miles inland at a very much less depth than had been reached by the Dover borings.

The vote of thanks having been put and carried unanimously,

Mr. LUCAS in reply said he was much gratified by the way in which his Paper had been received. He was anxious to learn on his own behalf a little more about the East Kent coalfield, and he was glad to know that Mr. Burr's remarks would be placed on record. Publication of sections of the borings was the surest way of getting to know anything about it.

He believed that the direction in which the boring were now going was the right one. As to the Brabourne boring, he thought it had decidedly proved this.

THIRD PAPER.

THE PAST, PRESENT, AND FUTURE OF THE HOP INDUSTRY.

BY PROFESSOR M. J. R. DUNSTAN, M.A.,

Principal of the South-Eastern Agricultural College, Wye.

Professor THEOBALD (Vice-Principal of Wye Agricultural College) said that Professor Dunstan had asked him to express his regret at being unable to attend the Meeting, and to read his Paper for him, which he did as follows :

The hop is indigenous to most parts of Europe, but though known as a wild plant in this country, it was some time before it was noticed by agriculturists and considered to be a profitable crop to grow ; in the eyes of many it was regarded, and actually petitioned against in Henry VI.'s reign, as a wicked weed, and shared this estimation with many of the other plants which are now cultivated (certainly in an improved form) for economic use.

The English word hop was adopted into our language from the German *hoppe*, Dutch *hoppen*, but the derivation is from the Saxon *hoppa*, meaning to climb—the botanical name is *humulus lupulus*: *humulus*, fresh

earth, and *lupulus* from *lupus salictarius*, by which name, according to Pliny, it was formerly called owing to its habit of growth among willows, and by choking them proving as baneful as a wolf to a flock of sheep; the ancient British name of the plant *Llewig-y-blaid* *l*, or bane of the wolf, inclines to bear out this somewhat fanciful derivation.

The cultivation of the hop was introduced into this country from Flanders in 1524, in the fifteenth year of the reign of Henry VIII., and hops were first propagated in Kent, Essex, and Surrey; they were next cultivated in the south and west parts of England and in Nottinghamshire. The first mention of them in our statute books occurs in 1552, Edward VI. cap. 2, and the earliest known account of their culture appears among some ancient French records of King Pepin's time, in which *humolarice* (hop gardens) are mentioned; but Beckmann states that the first positive notice of the use of hops occurs in the beginning of the 14th century, when it appears that they began to be regularly employed in the breweries of the Netherlands.

In many of the old herbals which I have consulted considerable space is devoted to hops and their medicinal and prophylactic value in the cure of disorders of the blood and digestive organs, and of diseases or ailments of the ear, and their value seemed much appreciated. When, however, their efficacy was admitted and the virtues of hops were found out, that they gave flavour and strength to the malt liquors, and were able to make them keep for as long a time as was desired, they were supposed to contain qualities noxious to the constitution, among which it was said that they "dried up the body and "increased melancholy," and accordingly we find in the regulation of Henry VIII. an order to the brewer not to

put any hops in the ale; and if the portraits we have of his uxorious Majesty are faithful, and the character he bears is true, neither a dried-up body or a melancholy temperament were his characteristics. Fitzherbert, in 1534, makes no mention of hops. Tusser (1562) gives minute directions for their culture in his curious rhymed lines. Reynold Scot (1576) in his *Perfite platforme of a hoppe garden* goes thoroughly into the matters of cultivation and general management, and speaks of the chief virtue of the hoppe as centred in the seed, and adds that "hereof I cannot warn you too often or too earnestly." Gerarde and Parkinson, herbalists (1640), mention the great improvement wrought in ale by the addition of hops, "being rendered much more healthfull or rather physicial," and Walter Blith, 1649, in the *English Improver Improved*, refers to the cultivation of hop plantations, and mentions that hops were then grown as a national commodity, but that it was not many years before that the City of London petitioned the Parliament against two nuisances: Newcastle coals with regard to their stench, and hops "in that they would spoyle the taste of drink and endanger the people, and had Parliament been no wiser than they we had been in a measure pined and in a great measure starved, which is just answerable to the principles of those men who cry down all devices or ingenious discoveries as projects, and thereby stifle and check improvements." Ale brewed from malt only was of course known from much earlier time, as in Edward I.'s reign there is a record of a grant from William Earl of Warwick to Adam Underwood, one of the conditions of which is that he should annually make for the lord of the manor three-quarters of malt. Alehoof, wormwood, broom, horehound, gentian, and ground ivy were used to make malt liquors keep, but they "wanted strength to

“make the liquors keep or made them very disagreeable
“to the taste.” An old distich runs :

Turkies, carps, hoppes, piccarell and beere,

or in another,

Hops, reformation, bays, and beer,
Came into England all in one year.

To continue our historical survey, Hartleb, 1689, in his *Compleat Husbandman*, states that England had hops from the Low Country, but that English hops were of a much more superior quality. Worlidge, in his *Systema Agriculturae, or Mystery of Husbandry Discovered*, 1668, gives minute directions as to the cultivation of the hop, and Mortimer, in *The Whole Art of Husbandry*, 1706, also states fully the management of hop gardens and the uses of the hop. Bradley in *The Riches of a Hop Garden Explained*, 1729, gives rules for the management of the hop “as may improve the
“most barren ground from one shilling to thirty or forty
“pounds an acre per annum,” and in his instructions for planting and managing hops, 1733, goes most fully into the best methods of cultivation, and of methods of raising hop-poles.

This short historical review of hop-growing will be sufficient to show the position hop-growing took in the arts of agriculture, and that considerable attention was devoted to it as an industry, in the words of Bradley, “considering the small space of ground the
“plant takes up in comparison to other plants, and the
“small expense of planting, the prodigious profit to the
“proportion and the great advantage it brings to the
“Crown of Great Britain.”

There seemed to be, according to Lance (*The Hop Farmer*, 1833), a considerable importation of hops into

England until 1693, by which time the culture in Kent was well established, and in 1710 by an Act of Queen Anne a duty of 3*d.* per lb. was laid on all hops imported. In George II.'s reign, 1734, we find a duty of 1*d.* per lb. levied on all hops grown in England and made fit for use payable within six months of being cured and bagged, and hop grounds were required to be entered in the books of the Excise authorities under a penalty of 40*s.* per acre, all places for curing and keeping were to be registered, and hops must be cured within six weeks of picking under a penalty of 5*s.* in the pound. Many other penalties were enacted: for rebagging foreign hops in British bags for exportation; against brewers using any bitter ingredients except hops; against the use of any but English hops in Ireland; against mixing any drug so as to alter the natural colour or scent; against unlawful and malicious cutting of hop-bines, &c.

The old duty of $1\frac{1}{2}\frac{2}{3}$ *d.* per lb. on home-grown hops was increased in 1802 to 12*s.* 7*d.* per cwt., and reduced in 1805 to 4*s.* 8*d.*, and the duty on hops imported was £8 10*s.* per cwt. The large amount of capital involved and the varying produce of the crop according to the season make the industry even now a speculative one, but these duties added to its speculative character, and before the duty was declared a very considerable amount of gambling took place.

The amounts received from the hop home duties varied considerably; in 1725 it is returned at £6,526, and in 1826 £468,410.

The duty was abolished in the middle of the 19th century, and the fluctuations of the industry have not appreciably altered since its abolition.

The acreage under cultivation is returned in 1807 as 38,218, and with some fluctuations there is a rise to

53,816 in 1835, and to 66,703 acres in 1880 ; in 1878 we find 71,789 acres devoted to hops reduced to 48,967 in 1905, and to 44,938 in 1907, and it is most probable owing to the present depression in the industry that the acreage will be reduced by about 4,000 acres for 1908.

The following figures for England are instructive :

Period of 10 years.	Average Acreage.	Average yearly Production. cwt.	Average yearly Imports. cwt.
1878-1887	68,002	460,782	204,727
1888-1897	56,430	438,215	196,999
1898-1907	48,841	434,545	190,179

These figures are taken from the Board of Agriculture returns, and although they may be, as the official returns are as a rule, somewhat under the actual amounts, they show that in the following periods the figures work out :

	Yield per Acre. cwt.	Proportion of Home Pro- ducts to Imports. as 1 to
1878-1887	6·7	0·44
1888-1897	7·7	0·44
1898-1907	8·8	0·43

and it may be seen therefore that our yield per acre owing to improved methods of cultivation, due possibly to an increased expenditure per acre on labour and manure has risen, and that the ratio of home to foreign supplies has not appreciably changed during the past 30 years, our consumption of hops being about 600,000 cwts. per annum.

The prices of hops show great fluctuation ; in the period 1787-1837 the range of prices was from £33 per cwt. in 1817 to £3 10s. per cwt. in 1822 ; and since the abolition of the duty, the price has ranged from £2 10s

to £20 per cwt. I shall speak later of the cost of growing hops, but it may be stated here as a fairly well-established maxim of hop growing that high farming with hops is essential, and that a reduction in the necessary amount of expenditure on labour or manure is met with a more than equivalent reduction of the crop, so that it should be the endeavour of every grower to do his hops as well as possible, and the man who has not the means to do this had better leave hop-growing alone.

The countries other than England in which hop-growing is carried on are Germany, Austria, Hungary, France, Holland, Belgium, Russia, United States, and Australasia. The finest hops are grown in the Saatz district of Bohemia, and these command the highest prices in the world's market. The imports into this country are mainly from Germany and the States, but the conditions under which hops are grown in these two countries are essentially different. In Germany (where the hop plantations are of small area as a rule) there is no effort made to push the crop for a heavy yield, and a yield of from 6 to 8 cwt. per acre is considered a good return; owing to the absence of mould and serious insect attacks, there is not much expenditure incurred in combating these pests, and the cost of getting the crop is comparatively small. The green hops are partly air dried by the growers and the merchants finish the drying process in kilns. In the United States the system is more comparable with our own. Large areas are the rule, and the most up-to-date methods in cultivation and securing the crop are used, but the cost is not as great as in this country. Both Germany and America are secured from foreign competition in their own markets by an import duty on hops.

Practically one-half of the importation of foreign

hops into this country takes place from the United States. In 1905 England took 35,427 cwt.; 1906 125,021 cwt.; 1907 126,142 cwt.; first three months 1908 75,150 cwt.; and the production in that country is restricted to districts in Oregon, California, New York, and Washington; comparatively small amounts are also raised in Idaho, Kentucky, Massachusetts, Michigan, Ohio, Pennsylvania, and Vermont, and it is in the Pacific States where the chief concentration of the industry now exists. The increase in American hop-growing has been rapid; in 1849 we find 31,223 cwt. produced; 1869 227,294 cwt.; 1889 349,741 cwt.; and 1907 545,643 cwt.: and the increase in American exports has also advanced considerably, more than 90 per cent. of these exports coming to this country. It follows therefore that the fluctuations in the trade are dependent upon the production of the two countries in any one season, a shortage of our crop tending to increase American exports and to keep down prices, and in the event of a heavy American yield the surplus is dumped in this country (as is now being done) at prices with which the English grower cannot possibly compete. Another point with regard to American exports is worth noting, and that is that a considerable proportion of them is marketed in Australia, Canada, and British India, so that it may be said the American hop export trade is dependent upon our Imperial markets, and the brewers in this country are adapting their methods to the use of these larger sized seeded hops for which there is little demand in German breweries.

It would be out of place in this paper to go into all the details of cultivation and management of the crop, and for those of my hearers who wish such details I would refer them to the article "Hop Cultivation" in

the *Journal of the Board of Agriculture*, 1893, pp. 217 et seq., where a full account of the industry will be found. I propose here merely to give the outline of the system, different aspects of which may be seen in the various districts in which hop-growing is carried on.

In early times there were two varieties of hops specified: the wild hop and the cultivated hop. Bradley states that these so-called varieties are really one, the larger sized leaf and improved fruiting power of the tame hop being due to cultivating and manuring.

The existing varieties of the hop were fully described by Percival, formerly Professor of Botany and Vice-Principal of Wye College, in the *Journal of the Royal Agricultural Society*, 1901, pp. 67-95, of which article the following notes are a digest. Only two distinct varieties are known—the Japanese hop and the ordinary hop; the former is of no brewing value. The characteristics of a good hop are: (1) large yield and should hang well when ripe without going off; (2) hardiness, resistance to mould and aphides; (3) high lupulin content. The varieties may be divided into Earlies and Mid-Season and Lates. Amongst the former are Hobbs Early, Prolific, Meophan, Henham Jones, Bramling, Whites Early, Early Bird—some of these notably prolific and the varieties including this type are coarse low quality hops—Bramling, Whites, and Early Bird are of fine quality. The mid-season varieties comprise Mercers and Rodmersham, Cobbs, Canterbury Whitebine, Coopers White, Fuggles, Old Jones, Goldings (a general term to denote the Whitebines). The late varieties include the Grape, Mayfield Grape, Bates Brewer, Bass Hop, Colgates. It is, of course, not desirable to have all the hops in a garden of one class of maturation, or picking must commence before some are ripe or extend to the

time when some are going off; a good early and a mid-season variety should be planted with perhaps a small area of lates to finish off the picking season.

The methods of propagation of the hop are by seeds or cuttings (setts). The hop is a perennial dioecious plant, but instances have occurred where both male and female flowers are borne on the same plant. The female blossoms are utilised in brewing and they are seeded or not, according to the presence or absence of the male plant. Some difference of opinion exists as to the relative brewing values of the seeded or seedless hop, but there appears to be no definite evidence as to the brewing value of the hop being diminished by the fact of it being seeded. From the grower's point of view it would appear from the work of Messrs. Howard, Salmon, and Amos (*South Eastern Agricultural College Journal and Report of Hop Conference, 1907,*) that fertilisation and consequent seeding of the hop has great advantages in that it causes the hop to be less liable to attack of mould and also to grow out better and give a greater weight per acre. In Germany there is a superstition, which is not sustained by any definite facts, that the brewing value is diminished, and in Bavaria male hops are ruthlessly extirpated from the gardens and their neighbourhood. The propagation of hops from seed is a method of raising new varieties, but as the variety of the male plant is generally not able to be ascertained this method of propagation is not satisfactory as so much is left to chance, and the production of a new and useful variety is somewhat problematical. There is no doubt that the creation of a variety with the brewing characteristics of the Golding, the productivity of the Fuggle, and a resistance to mould would be of immense value to the grower.

The new varieties that have been introduced in the last 20 or 30 years were obtained by a process of selection—when a plant of unusual vigour or earliness or other satisfactory characteristic is noted in a garden, cuttings or setts are taken from it and propagation so takes place.

The setts are taken in March and planted out, and the following winter they are transferred to the garden where they are to be grown—one set being placed in each hole which is made 18 inches square—the distance apart of the hills or places in which the setts are planted varying from six to eight feet. As a general rule, the wider the alleys or rows in which the hops are planted the less the crop per acre, but the better the quality, as sun and air have freer access and there is less danger of “housing.”

Hops flourish best on the deep soils of a clayey, calcareous loamy character with an open marly subsoil, and not liable to severe drought—the position should not be subject to late frosts and must be protected from strong winds. The hop is principally cultivated in England between the two great chalk basins of the Isle of Wight and London, and in Hereford and Worcester, on the old red sandstone and red marls mixed with sands or limestone. When the garden is started deep cultivation is a necessary preliminary so as to afford a good depth of staple to which the roots may ramify, and throughout the cultivation the formation of a deep, easily-worked soil is the object, so as to keep the plant always in a healthy state of growth.

Of systems of training there are many which may be divided into two classes, poles and permanent poles and wire with strings renewed each year. The former system entails less capital and perhaps less labour in

training, but the latter system is more generally adopted on account of its affording more light and air to the plants, less labour at picking time and generally an increased crop per acre.

The cost of establishing a permanent wire system is from £50 to £60 per acre, and the annual repair on such wire work should be from £1 to £1 10s. per acre. When this annual charge, together with the interest charge on capital expenditure, is set against the cost of setting up, taking down and stacking, with renewals of poles, it is found to be a considerable saving of expense, and the wire work may be regarded as a permanent equipment and improvement of the farm.

The system of training hops on a slanting wire was introduced some 30 years back, but for many years it had already been utilised in some of the German hop-growing districts. The habit of the hop is to grow straight up, hence when trained at an angle of 45 degrees they require a considerable amount of training to keep them on the strings, and especially during strong winds, when they are liable to be blown off the wires, is the expenditure on training a serious item.

As to manuring, the hop is an all round feeder and requires to be supplied with all the elements of plant food in a suitable condition. The basis of hop manuring must be a bulky, organic manure, dung or high-class shoddies, or materials of that description, supplemented by soluble phosphatic and nitrogenous manures during or just before the time of active growth, and in the case of soils of a sandy nature, some potassic dressing or, when lime is deficient, a dressing of lime, ground lime or chalk should be applied. It must be remembered in manuring hops that there is a very considerable amount of growth to be made, and that owing to the cutting of the bine

which is necessary a great amount of the organic matter manufactured by the plant is not returned to the soil. Frequent cultivation is necessary in the growing season, the ground must be often stirred and aerated, and active healthy growth promoted throughout. A check to the plant through defect of cultivation may mean a weakening of the growth, and therefore a greater susceptibility to an attack by fly or mould, which will be far more damaging in its effects on an unhealthy plant than on one which is in a sound state of active growth. The heavy manuring of hops conduces naturally to a very luxuriant growth, and thus renders the plant more delicate and liable to fungus attack than a plant grown under more "natural" conditions.

The two chief evils to which the hop plant is subject are the aphid and the mould, but there are other enemies: wire-worms, jumpers, red spider, and hop flea, which all have to be guarded against and which in different seasons attain different degrees of virulence. Washing with soft soap as a basis, with the addition of quassia, is a remedy and preventive of insect attack. The soap should be added to the water in sufficient quantity to make a permanent lather (from four to ten pounds is usually sufficient, but in a very hard water the larger quantity must if necessary be exceeded) and from eight to ten lbs. of quassia to 100 gallons of water. This is sprayed on to the plants by hand or horse labour, care being taken to thoroughly wash both surfaces of the leaves. To destroy wireworm, traps of mangel wurzel are placed about the garden and these are collected occasionally and the pests destroyed. Beneficial insects such as the larvæ of the ladybird (*Niggers*) and of the lace wing fly should be encouraged, as these prey upon the aphid and may greatly reduce their numbers.

To combat the mildew, sulphur is used, and this is either blown on to the plant by means of bellows worked by horse labour or applied in the form of sulphide of lime as a spray, the former method is in more general use, and is generally carried out when the leaf is wet with the dew so that the sulphur adheres to the leaves.

Hops are picked when the cones change colour from a greenish yellow to a somewhat deeper shade of yellow, and when the tips of the cones close and "rustle" when touched. The ripening and "going off" or turning brown stage is difficult to hit, and picking is therefore generally done before a decided change in colour takes place, as the "going off" is very rapid when it once commences, and a very rapid deterioration in quality results. The hops are generally picked by more or less unskilled labour from the towns and the price paid per bushel depends upon the character of the crop—a light crop costing more to pick per bushel than a heavy one.

The curing or drying process is of great importance, as by careless procedure at this stage the value of the crop may be greatly depreciated. The object of the drying is to remove the greater part of the water which is contained in the green hop, but too rapid drying or the use of too high a temperature in drying may result in the valuable aromatic constituents of the hop being driven off, and changes induced in the other constituents which result in an unsatisfactory flavour being imparted to them. The other extreme—slack drying—yields a hop that will not keep satisfactorily, and is as faulty as the overdried or burnt sample. Hops are dried in oasts or kilns either over an open fire of anthracite, or by means of hot air heated by contact with steam pipes, or by passage over hot pipes through which the products of combustion of the furnace are passing. The temperature of drying is

from 120° to 140° Fahrenheit, but considerable skill is required in the drying process, which lasts from eight to ten hours under ordinary conditions, to regulate the temperature according to the condition of the hops.

In order to give the colour required by brewers, a certain amount of bleaching of the cones is required; this is done by burning sulphur in the oasts during the first stages of the drying process. This sulphuring also has the effect of more or less sterilising the hops so that fermentation does not readily take place and the growth of fungi is also prevented.

The use by brewers of substitutes for malt, and the contamination of one of those substitutes (glucose) by arsenic, caused some years ago a serious epidemic of poisoning in Lancashire in which several deaths occurred. This caused an inquiry into the purity of brewing materials, and it was found that malt to a considerable extent, and hops to an infinitesimal extent, could contain arsenic if the coke or coal used in the open fire system of curing were itself contaminated with arsenic. The relatively small quantity of hops used per barrel of beer made the danger of arsenic contamination through hops a negligible one, but the scare was used (in the opinion of some, always in a rising market) to depress the price of those hops which were found by tests (which both in the manner of sampling of the hops and in the method of application of the test were not free from inaccuracies) to be contaminated with a minute proportion of arsenic. As the method of entry of the arsenic into the dried hops is through the use of an impure anthracite in the open fire drying process, it is obvious that the use of a pure fuel or of a hot-air system of drying would eliminate any risk of contamination.

After drying, the hops are bagged in the familiar

pockets containing about $1\frac{1}{2}$ cwts., and marked with their place and year of growth. East Kent Goldings are the choicest of the English hops and realise the highest price in the markets if in good condition. The value of hops to the brewer is due to their flavouring and preservative effects, and the mechanical action of the bracts for filtering purposes is also most useful. The valuation of a hop for brewing purposes by chemical analysis is not yet on a satisfactory basis, there is some doubt as to whether the determination of the resins will lead to an accurate determination of brewing values. The buyer is guided by the colour of the sample, its condition, the whole or broken character of the cones, freedom from evidences of insect or mould attach, its aroma and "condition," as evidenced when the sample is rubbed in the hand, but it is difficult to reduce these characteristics to any accurate basis at present.

The system of selling hops has its peculiar characteristics, the hops are bought from the grower by the factor who acts as the collector for the merchant from whom the brewer buys his requirements. The factor and merchant are also agents for the sale of foreign hops so that they have a more accurate knowledge of the conditions of the trade than either grower or brewer, and the hop market is often of a very speculative character, the grower being tempted to delay the sale of his hops until the time when he thinks a better market may be secured, and in many cases this action has led to a considerable loss on his part.

Coming next to the annual cost of hop growing, the following figures (which have been carefully worked out by Mr. Arthur Amos) may be taken as representing the average cost.

	£	s.	d.
Interest on expended capital for planting and erecting wirework (5 per cent. on £60) -	3	0	0
Rent, rates, taxes, &c. - - - -	4	0	0
Cutting bines - - - - -	0	3	6
Repairing wirework - - - - -	1	0	0
Manuring - - - - -	10	0	0
Digging - - - - -	1	0	0
Cutting - - - - -	0	6	0
Stringing (string and labour) - - - -	2	12	6
Tying and training - - - - -	1	10	0
Sulphuring - - - - -	1	7	6
Washing - - - - -	4	0	0
Catching wireworm - - - - -	0	5	0
Skimming - - - - -	0	7	6
Slip digging (twice) - - - - -	0	18	0
Earthing - - - - -	0	2	0
	30	12	0

If a crop of 10 cwts. is grown.

Picking - - - - -	10	0	0
Drying - - - - -	4	10	0
Pocketing - - - - -	0	15	0
Carriage, insurance, commission, sampling -	3	10	0
Insurance of pickers - - - - -	0	5	0
	19	0	0

Total Cost £49 12 0

It will be seen from the above figures that a large proportion of the cost is for labour, and the labour cost per acre (exclusive of picking), assuming one man to four acres and one horse to ten acres (for summer work), will be found to work out at not less than £15 per acre.

Considerable discussion has recently taken place with regard to the position and future of the hop industry in England. By some it is stated to be doomed, unless some State interference takes place, by others it is said to be merely passing through one of the phases of depression possibly through over-production which many or most industries suffer, and which are sometimes succeeded by a wave of returning prosperity. It is not my place to discuss the burning question of to-day here; a duty on hops would affect the industry in more ways than the (according to some opinions) temporary rise in price which might cause an extension of the area devoted to hop-growing, and in the course of a few years might result in an equal depreciation of prices. The chief evil which would accrue if hop-growing were discontinued in this country is the great and serious diminution of labour which is now employed in the hop gardens of England—permanent labour in cultivation during the year and temporary labour during picking time, of people from the towns, who thus gain a healthy and remunerative holiday from the crowded life in their homes. The complaint of rural depopulation is general, and if this industry is to take its place with those that are fast vanishing from our country districts we should consider whether it is not possible to arrest this extinction. What can be done by the grower to carry on his business at less expense, and so reduce the cost of production without interfering largely with the labour question? A cheeseparing policy will not succeed in hop-growing—he who attempts to grow hops “on the cheap” will find himself with no crop at all. The growers who are suffering most in this time of low prices are those who secure a high quality of crop with a low yield, the growers of delicate low-yielding Golding are more

severely punished than the growers of more robust higher-yielding Fuggles; the brewer is adapting himself to the use of low-priced coarser hops, and the public taste is being educated to drink what our forefathers would probably not have called beer, and the brewer is also economising considerably in the quantity of hops used per barrel of beer. Whether the brewer is wise in so reducing the cost of production is his business, but the falling off in brewing 1899-1905 is measured by a reduction of roughly $3\frac{3}{4}$ million barrels of beer. It would seem, however, that a fine aromatic hop is not so much in demand now as formerly, and, as has been already stated, the grower must use a variety of hop combining a certain amount of quality with a very certain amount of quantity of yield. Quality versus quantity is the cry of the miller and the maltster too but the grower must be recompensed for his reduction in yield by an increased price for his smaller high quality yield or he will not respond to the cry.

The position of some brewers in the discussion of the hop industry question to-day is somewhat anomalous. There are those who state that a rise in the price of hops owing to the imposition of a 40s. per cwt. duty on imported hops would cause an increase of $7\frac{1}{2}d.$ in the cost of production of a barrel of beer, and some brewers have expressed themselves as not averse to the imposition of this duty. A rise in the price of beer, owing to the keen competition in the trade, is admittedly not possible; this extra cost must come out of the brewers' profits, which in the present state of the trade and the stated necessity for the tied-house system will be a serious matter. It would appear therefore that the consumer would have to pay by a reduction in quality, or possibly the brewer is enlisting a body of supporters among the

hop-growers who will come to his assistance when his time of need comes.

The cost of hop cultivation has been already mentioned, and it does not seem as though with an average crop of 10 cwt. per acre that a price of £5 per cwt. will recoup the grower for more than his bare outlay. He must therefore turn his attention to those hops which will give an average crop of more than 10 cwt. per acre. The brewer may argue that the present system of cultivation and management sacrifices quality to quantity, but is the difference in price (to any but the "old-fashioned" high-class brewer) between a high quality and high quantity hop sufficient to encourage the grower to produce the former article? The brewer seems to have the matter in his own hands: if he will pay a reasonable price for the admittedly superior English hop, it will continue to be grown, but if the lower grade foreign hop will suit his purposes and the altered condition of his trade, then the demand for the expensively produced English hop will languish and the industry must gradually die out.

To sum up, the hop-grower's business is a highly specialised and speculative one. To get a crop he must spend a very considerable amount per acre, and he is after all subject to the violent fluctuations of the market as well as dependent on weather and the prevalence of insect and fungus attack. His product is for immediate sale, or it suffers considerable depreciation in value if sold in the year after its production, and although by means of cold storage, hops can be preserved for some considerable time without change, this system is rather to the advantage of the user who can buy his stocks in times of low prices and hold them against a rising market, than of the grower who requires ready money

for the payment of his expenses of production, and who is not a capitalist. It is difficult to see where substantial reductions can be made in the cost of production, but it behoves the grower to study every point—in the choice of variety, in method of cultivation, in manuring, in drying, and in system of marketing, so that the total cost of production of the finished article may be reduced to an economical minimum. If outside assistance to his industry is even then found to be necessary for its continuance and the weight of public opinion is against such assistance, then we must be dependent on the foreigner for one more of our necessary commodities, and the hop-grower who had done so much for the healthy and regular employment of labour and for keeping many of our hop villages together must disappear as a constituent of our rapidly shrinking agricultural community.

Mr. G. LANGRIDGE (Past-President) said the Paper was one of peculiar value and interest to all who had to do with land in Kent.

The position, from the hop-growers' point of view, looked at present very serious indeed, and everyone from the landowner to the labourer had a vital interest in the future of the industry.

The maximum amount of hops required for brewing was about 600,000 cwt., of which English hop-growers had produced on an average about 400,000 cwt. and could easily produce the full quantity required if the prices were sufficient to pay for production. A comparison of the figures for 1886 and for the current year showed that a large area of hop land had been grubbed up.

The picking of hops gave much healthful and even

enjoyable employment to more than 500,000 men and women, besides children, who came chiefly from London and large towns and who down to the youngest could earn wages, while they had the advantage of the country life for from four to six weeks in the best time of the year.

The growing of hops was a somewhat uncertain enterprise even without taking dumping into consideration. He remembered, as a boy, an old saying regarding the risks run by the grower—

“First a flea, then the fly,
Then the mould, and then they die.”

He had very great pleasure in proposing a hearty vote of thanks to Mr. Dunstan for his interesting Paper, and to Mr. Theobald for having so kindly come to read it.

Mr. H. W. COBB (Fellow), in seconding the vote of thanks, said he considered the Paper a most admirable history of the origin and progress of the hop industry, and felt that it would form a valuable addition to the *Transactions* of The Institution for future reference. He would have been glad to hear from the authors of this and the preceding Paper the same note of confidence which had been possible for Mr. Mowll to pronounce when dealing with Dover and its prospects. If coal and hops could be made to pay then all Kent would indeed “laugh and sing.”

The vote of thanks having been put to the Meeting and carried unanimously, the morning's proceedings then terminated.

THE ANNUAL GENERAL MEETING

Monday, May 25th, 1908.

THOMAS TAYLOR WAINWRIGHT (President) in the Chair.

The Report of the Scrutineers, appointed at the Ordinary General Meeting of Monday, May 11th, 1908, under the provisions of Article XLII. of the By-Laws, was read to the Meeting.

The Report declared that the following were elected a

COUNCIL FOR THE ENSUING YEAR.

President.

HOWARD MARTIN.

Vice-Presidents.

JOHN WORNHAM PENFOLD	LESLIE ROBERT VIGERS
ALEXANDER ROSE STENNING	WILLIAM EDGAR HORNE

Members of Council.

THE HON. EDWARD GERALD STRUTT	FREDERICK GEORGE CHINNOCK
JOHN FARRER	ROBERT NEVILLE HOLBECHE
WILLIAM EDWARD WOOLLEY	HENRY W. D. THEOBALD
THOMAS BINNIE	SAMUEL HOOD COWPER
HOWARD CHATFEILD CLARKE	COLES
EDWARD BLAKEWAY I'ANSON	ARTHUR LYON RYDE
JOHN GERMAN	HENRY HERBERT SMITH
GEORGE FRANCIS STEWART	JOHN HUBERT OAKLEY
	ALFRED MICHELMORE

Professional Associates of Council.

JOSEPH HENRY SABIN
CHARLES PELL HALL

Associates of Council.

THE RIGHT HONOURABLE LORD ALVERSTONE, G.C.M.G.
(Lord Chief Justice of England).
SIR JOHN WOLFE BARRY, K.C.B.

The Report of the Council on the affairs of The Institution, and the Statement of Receipts and Expenditure for the year 1907 were read.

IT WAS RESOLVED—"That the Report of the Council and the Balance Sheet be received and approved, and be printed and circulated with the '*Transactions*.'"

IT WAS RESOLVED—"That the thanks of The Institution be given to Messrs. H. C. NEWMARCH and STANLEY HICKS for the efficient performance of their duties as Auditors, and that they be requested to continue their services for the ensuing year.

IT WAS RESOLVED—"That the thanks of The Institution are due and be given to the President, Vice-Presidents, and the other Members and Associates of the Council, for the able manner in which they have administered the affairs of The Institution."

IT WAS RESOLVED—"That the thanks of The Institution be given to Mr. PERCIVALL CUREY (the Honorary Secretary), to Mr. ALEXANDER GODDARD (the Secretary), and the other officers of The Institution, for the able manner in which they have executed their several duties."

THE PRESIDENT presented the following Prizes won by Candidates in the Professional and Preliminary Examinations, 1908:—

THE PENFOLD SILVER MEDAL

for the highest percentage of marks (over 75% of the maximum) in the Students' and Non-Students' divisions of the Intermediate Examination 1908, to WILLIAM WYRILL SISSONS.

THE INSTITUTION PRIZE OF THE VALUE OF £15 15s.,

to PHILIP ARTHUR CROW, first of the Student Candidates in the Intermediate Examination 1908.

THE SPECIAL PRIZE OF THE VALUE
OF £10 10s.

to TOM SPENCER BRIGHT, second on the pass list of the Student Candidates in the Intermediate Examination 1908.

THE PENFOLD GOLD MEDAL

to ROBERT HENRY MILLS for the highest marks (over 75 % of the maximum) in the Final Examination 1908.

THE DRIVER PRIZE OF THE VALUE OF £15

to JOSEPH DUTTON for the highest marks gained by a Non-Student Candidate in the Intermediate Examination 1908.

THE "CRAWTER" PRIZE OF THE VALUE OF £10

to CHARLES GEORGE BROWN, for the best work in the subject "Principles and Practice of Valuation" in the Final Examination 1908.

THE "BEADEL" PRIZE OF THE VALUE OF £5.

to WATHEN ARTHUR WALLER, for the best work in the subject "Agriculture" in the Intermediate Examination, 1908.

THE "GALSWORTHY" PRIZE OF THE VALUE
OF £15

awarded to the Candidate in the Final Examination who, having passed the previous Examination as a Student, is found to have obtained the highest aggregate of marks in the two Examinations combined, to ALAN ROY PETRIE, the amount of the prize being devoted partly to the purchase of instruments and partly to the payment of the winner's future subscriptions.

THE "PRELIMINARY PRIZE" OF THE VALUE
OF £2 2s.

to SYDNEY ARTHUR ROWDEN, for the highest number of marks in the Preliminary Examination 1908.

It was resolved—

"That the thanks of the Meeting be given to Messrs. R. B MANN, G. P. KNOWLES, and H. T. SCOBLE, for their services as scrutineers."

A vote of thanks to Mr. Wainwright for his conduct in the chair was carried unanimously, and the proceedings then terminated.

THE FORTIETH ANNUAL REPORT OF THE COUNCIL.

Annual General Meeting, 25th May, 1908.

With the close of another session it becomes the duty of the Council again to lay before the Members of The Institution their Report for the year. Following a now well-established precedent, they propose to deal first with questions of membership, comparative statistics in connection with which will be found in the following tables:—

TABLE A.

	Honorary Members.	Fellows.	Professional Associates.	Associates.	Students.	Colonial Fellows.	Total.
May 1906	25	1878	1502	74	361	36	3876
May 1907	27	1832	1638	74	345	37	3953
May 1908	28	1819	1786	77	350	40	4100
	+1	—13	+148	+3	+5	+3	+147

The following table shows the growth of the Membership since the foundation of The Institution in 1869.

TABLE B.

	Members (or "Fellows" after 1881):	Associates.		Students.	Total.
		Professional.	Ordinary.		
May 1869 ...	162		38	2	202
" 1870 ...	180		59	2	241
" 1871 ...	190		65	2	259
" 1872 ...	205		67	4	276
" 1873 ...	225		74	5	304
" 1874 ...	247		89	6	332
" 1875 ...	275		101	11	387
" 1876 ...	300		119	8	427
" 1877 ...	310		133	11	454
" 1878 ...	312		134	8	454
" 1879 ...	330		146	10	486
" 1880 ...	342		155	10	507
" *1881 ...	357		164	14	535
" 1882 ...	480		235	7	722
" 1883 ...	557	218	74	38	887
" 1884 ...	666	307	80	58	1121
" 1885 ...	703	317	86	86	1192
" 1886 ...	716	316	84	80	1196
" 1887 ...	741	339	89	108	1277
" 1888 ...	798	333	90	102	1323
" 1889 ...	910	334	89	110	1443
" 1890 ...	1095	310	89	123	1617
" 1891 ...	1374	336	96	140	1946
" 1892 ...	1646	342	97	172	2268
" 1893 ...	1629	353	93	181	2269
" 1894 ...	1626	381	84	204	2309
" 1895 ...	1629	430	83	210	2352
" 1896 ...	1802	465	86	220	2573
" 1897 ...	1808	540	84	252	2684
" 1898 ...	1835	615	85	272	2807
" 1899 ...	1887	686	84	308	2965
" 1900 ...	1883	757	88	336	3064
" 1901 ...	1883	834	89	364	3170
" 1902 ...	1891	906	86	392	3275
" 1903 ...	1897	1025	86	396	3404
" 1904 ...	1886	1140	80	409	3515
" 1905 ...	1893	1312	80	384	3669
" 1906 ...	1878	1502	74	361	3815
" 1907 ...	1832	1638	74	345	3889
" 1908 ...	1819	1786	77	350	4032
Honorary Members					28
Colonial Fellows					40
1908 Grand Total					4100

* Since August, 1881, "Members" have been designated "Fellows" and, in 1883, "Associates" were divided into "Ordinary" and "Professional" Associates.

These figures point to the continued prosperity of The Institution, and the Council are pleased to note that the Membership has now for the first time exceeded four thousand. They view with satisfaction also the increase in the number of students, which, though in itself small, would seem to indicate an appreciation of the increased advantages recently granted to this class, and referred to in some detail in the Council Report of 1905-6.

With so large a Membership the toll of death must also unfortunately be considerable, and the Council have to deplore the loss of one of their most valued and distinguished Honorary Members, His Grace the late Duke of Devonshire, K.G., whose connection with The Institution was of twenty-five years' standing, and who will long be remembered as a generous patron of agriculture and as an upright and worthy representative of his class.

The Institution has also suffered loss through the deaths of a number of old and respected professional Members: Mr. F. W. Dymond of Exeter, who had been connected with The Institution from its foundation; Mr. G. R. Crickmay (1869); Mr. W. Graham (1875); and Mr. J. H. Peppercorn (1876). Among those whose Membership was of somewhat more recent date the Council cannot refrain from mentioning Sir William R. Copland of Glasgow (1891), who did so much to add to the pleasure of The Institution's visit to Scotland a year ago, and Mr. Charles Gott of Bradford (1891), who held a foremost place among the surveyors in the north of England.

THE DESIGNATORY LETTERS.

It will be remembered that in their last Report the Council referred to an injunction, which had been

granted in the Chancery Division of the High Court, restraining a firm of house agents, one of whom was a Professional Associate of The Institution, from making improper use of the designatory letters. The name of the Professional Associate in question has now been removed from the list of Members.

Complaints in respect of other irregularities have been dealt with by the Council during the year.

FINANCE.

The accounts for the year show an apparent decrease in the receipts on Revenue Account owing to a quarter's rent for No. 11, Great George Street, having been received in 1906 just before the end of the year, making five payments in that year and only three in 1907. There is also a falling off under the head of Examinations, due to a decrease in the number of Candidates as compared with 1907, and to the extra expense incurred in holding the triennial Special Certificate Examinations. The other items call for no special comment.

TABLE C.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Revenue Balance in hand			Total Payments out of Revenue (Current Expenses)	9,081	0 11
1st January, 1907 . . .	398	10 2	Purchase of Furniture . . .	186	9 7
Total Receipts on Revenue .	10,470	8 11	Purchase of £1,702 1s. 6d. India 3 per cent. Stock .	1,500	0 0
Examinations Account . . .	286	2 10	Reserve Fund, Purchase of £733 0s. 5d. Consols 2½ per cent.	607	10 10
Receipts on Capital Account .	843	3 0	On Deposit at 7 days' call .	500	0 0
Reserve Fund	65	17 4	Balance in hand, December 31st, 1907	217	7 11
Examinations Suspense Account	28	7 0			
	£12,092	9 3		£12,092	9 3

THE EXAMINATIONS, 1908.

The following table shows the number of Candidates who have presented themselves each year for the Preliminary and Professional Examinations, with the percentages of passes.

TABLE D.

Years.	Preliminary Examinations.			Professional Examinations.		
	Candidates.	Passed.	Percentage.	Candidates.	Passed	Percentage.
1881	13	6	46.15	2	1	50.00
1882	30	17	56.66	—	—	—
1883	44	22	50.00	25	22	88.00
1884	51	30	58.82	36	23	63.89
1885	46	37	80.43	43	31	72.09
1886	46	34	78.26	56	38	67.85
1887	53	39	73.58	58	45	77.59
1888	48	39	81.25	73	52	71.23
1889	51	41	80.39	71	51	71.83
1890	53	44	83.01	96	70	72.91
1891	76	60	78.94	92	68	73.91
1892	83	64	77.10	125	93	74.40
1893	77	57	74.00	149	100	67.11
1894	97	66	68.00	182	129	70.87
1895	121	80	66.11	196	141	71.93
1896	117	78	68.37	212	143	67.45
1897	133	91	68.42	236	151	63.97
1898	127	95	74.80	265	169	63.77
1899	145	112	77.25	290	184	63.44
1900	131	102	77.86	325	193	59.38
1901	142	111	78.45	362	246	67.95
1902	165	133	80.06	369	241	65.30
1903	151	108	71.52	424	294	69.34
1904	152	108	71.05	480	370	77.08
1905	132	88	66.66	505	399	79.00
1906	190	106	55.78	535	349	65.23
1907	171	102	59.64	554	422	76.17
1908	160	106	66.25	468	351	75.00
TOTALS	2,705	1,976	73.05	6,229	4,376	70.25

Among the 468 Candidates who came up for the Professional Examinations were 46 who had been

referred back in their typical subjects and presented themselves for re-examination. Of the 9 "Land Agency" Candidates in this category 7 passed, of the 8 "Valuation" Candidates 6 passed, and of the 29 "Building and Quantity Surveyor" Candidates 16 passed, thus completing their respective examinations.

Of the new Candidates, 5 "Land Agency," 4 "Valuation," and 23 in the "Building and Quantity" class were referred back in their typical subjects, having otherwise passed the examination as a whole.

The numbers include 1 English Candidate examined in Dublin and 2 Scottish Candidates who presented themselves in Glasgow.

Table E shows, for each Division and Sub-division, the number of Candidates who sat, the number successful in passing, the number who failed in the typical subject only, the marks obtainable and the percentage obtained, the percentage of successes, and the grand aggregate of marks in each class.

The Scottish Candidates and those re-examined in the typical subject only are not included in this table.

TABLE II.

	Sub-Division I. Land Agency.			Sub-Division II. Valuation.			Sub-Division III. Building and Quantities.			Total Maximum Marks.	Marks obtained.	Percentage of Marks obtained.	Percentage of Candi- dates who Passed.
	Examined.	Passed.	Referred Back.	Examined.	Passed.	Referred Back.	Examined.	Passed.	Referred Back.				
Intermediate Examination, Students	18	15	2	42	38	2	19	10	9	79,000	48,848	61·82	79·76
Intermediate Examination, Non-Students	45	32	3	60	47		79	48	12	184,000	111,139	60·40	69·02
Final Examination	26	22		78	69	2	35	29	1	139,000	87,076	62·63	86·33
Direct Fellowship Examination	1	1		5	4		8	4	1	21,000	12,621	60·01	64·28
Totals ...	90	70	5	185	158	4	141	91	23	423,000	259,684	61·13	76·68

THE PRIZES.

Prizes have been awarded to Candidates in the Examinations of 1908, as follows:—

The “Institution” Prize, value 15 guineas, to Philip Arthur Crow, a Candidate in the “Valuation” sub-division, who headed the list of Student Candidates for the Intermediate Examination, obtaining 750 marks out of a possible 1,000.

The “Special” Prize, value 10 guineas, to Tom Spencer Bright, a “Valuation” Candidate, who obtained 747 marks out of 1,000 in the Intermediate Examination.

The "Penfold Silver Medal," to William Wryrill Sissons, a Student Candidate in the Land Agency Division, who gained 786 marks out of 1,000, but being just over the age of $21\frac{1}{2}$, was not entitled to compete for the "Institution" or "Special" Prizes.

The "Penfold Gold Medal," to Robert Henry Mills, a "Valuation" Candidate, for the highest total, viz.:—829 out of 1,000 marks, in the Final Examination.

The "Galsworthy" Prize to Alan Roy Petrie, who, having previously passed the Intermediate Examination as a Student Candidate, gained the highest aggregate total of marks in that and the Final Examination of 1908. This Candidate's marks in the two Examinations reached 79 per cent. of the possible total.

The "Driver" Prize, to Joseph Dutton, a "Quantities" Candidate, who headed the list of successful non-Student Candidates with 748 marks out of 1,000.

The "Beadel" Prize, to Wathen Arthur Waller, a non-Student Candidate, for the best marks (94%) in the subject "Agriculture."

The "Crawter" Prize, to Charles George Brown for the best marks (91%) in the subject "Principles and Practice of Valuation," in the Final Examination.

The "Preliminary" Prize to Sydney Arthur Rowden, who passed at the head of the list of Candidates in the Preliminary Examination, 1908.

The First "Daniel Watney" Prize in connection with the Special Certificate Examination in Forestry was awarded to Mr. C. H. Donne, and

The "Second Daniel Watney" Prize to Mr. F. W. Parker.

THE EXAMINERS.

Mr. E. B. I'ANSON and Mr. J. D. WHITTAKER having retired from the position of examiners after many years of valuable service to The Institution, the Council have been fortunate in securing the assistance of Mr. FERDINAND HUDLESTON and Mr. F. J. LLOYD, F.C.S., F.I.C., in their place. In other respects the list of examiners remains the same as last year.

The Council feel that, in expressing their sense of the obligation under which The Institution rests to all the examiners, the names of the following gentlemen, other than Members of the Council, who gave their services in an honorary capacity, call for special mention, viz.:—His Honour Judge PHILBRICK, K.C., Mr. J. WILLIS BUND, Mr. E. J. CASTLE, K.C., Mr. R. F. COLAM, and Mr. H. A. RIGG, K.C., in the legal subjects; and Mr. H. CHESTON, Mr. J. E. DROWER, Mr. W. EVE, Mr. E. J. HARPER, Mr. F. HUDLESTON, Mr. F. LEE, Mr. C. JOHN MANN, Mr. H. PERCY MONCKTON, Mr. J. DOUGLASS MATHEWS, and Mr. J. D. WALLIS, in the professional subjects.

The Council also desire to take this opportunity of tendering their thanks to the Members of the Irish, Scottish, and Counties Palatine Provincial Committees for the excellent arrangements they made for carrying out the Preliminary and Professional Examinations in Dublin, Glasgow, and Manchester respectively.

SCHOLARSHIPS AT THE UNIVERSITIES.

The Council are pleased to report that The Institution Scholarship at Cambridge University, of the value of £80 per annum, has been obtained by Mr. H. G. Head, a son of Mr. J. G. Head, who is himself a Fellow of The Institution by examination. The successful candidate for the scholarship of £50 per annum at the University of North Wales, Bangor was Mr. C. E. Thomas. Both scholarships are tenable for three years. A similar scholarship at the Armstrong College, Newcastle-on-Tyne, was not awarded.

SPECIAL CERTIFICATE EXAMINATIONS.

The triennial examinations for the special certificates granted by The Institution for proficiency in Forestry, and Sanitary Science, were held in June last. Eight candidates presented themselves in Sanitary Science, of whom six proved successful; and ten in Forestry, of whom three only satisfied the examiners. The two first of these, Mr. C. H. Donne and Mr. F. W. Parker, obtained a high percentage of marks, and were awarded the First and Second "Daniel Watney" Prizes respectively.

A sufficient number of applications were not received to justify the examination for the Surveying Special Certificate being held.

Mr. DANIEL WATNEY, Professor SOMERVILLE, Mr. GEORGE MARSHALL, and Mr. J. H. OAKLEY kindly undertook the conduct of the Forestry Examination, and Professor ROBINSON that in connection with Sanitary Science.

THE PUBLICATIONS.

The interest in the Papers read at the Ordinary General Meetings has been well sustained, as evidenced by the attendance at the Meetings and by the discussions which have followed the reading of the Papers. The wide range of the subjects dealt with affords proof, were such needed, of the diverse matters with which a surveyor may be called upon to deal.

To mention any Paper in particular may seem somewhat invidious, but in view of the interest which the subject of Small Holdings is at present arousing, the Council may be permitted to draw attention to the valuable treatise on the Small Holdings and Allotments Act, 1907, which was contributed by Mr. W. G. S. Rolleston, and which formed the text for so practical and comprehensive a discussion that a second evening was needed to enable it to be adequately dealt with. During the discussion some divergence manifested itself in the views held by Members as to the proper construction to be placed upon certain portions of the Act, more particularly as to the basis upon which compensation should be assessed. The Council therefore decided to submit the debateable points for Counsel's opinion, which has since been circulated to Members, and will also appear for permanent reference in the next issue of the *Professional Notes*.

The Gold Medal for the best Paper read at a Meeting of The Institution during the Session 1906-7 was awarded by the Council to Mr. David Murray, LL.D., for his valuable and exhaustive contribution entitled "The Valuation Roll in Scotland and the proposal to enter "Land Values upon it," the reading of which formed part of the programme for the Glasgow Meeting. It

was a source of great pleasure to the Council that Dr. Murray was able to be present in person to receive the Medal from the hands of the President at the Opening Meeting of the present Session.

The extensive use made of the *Professional Notes* by those wishing for advice upon points of professional practice continues to show the value of this publication. The attention of Members is drawn to Section V., wherein may be found copies of memoranda issued by the Council on different matters, legal opinion on points of uncertainty connected with the surveyor's profession which in the opinion of the Council call for elucidation, and other subjects of interest.

THE LIBRARY.

No works of outstanding interest have been added to the Library during the past year, but the desirability of placing in the hands of Members all that is latest and best among publications of professional value has not been lost sight of, and a large number of new books and fresh editions of old ones have been purchased both for the Library proper and for the Loan Library.

Members interested in the archæology of London will be glad to hear that The Institution is now the possessor of a complete set of the publications of the London Topographical Society.

THE FORESTRY MUSEUM.

The rearrangement of the Forestry Museum referred to in the last Annual Report is being actively continued by Dr. Rendle, and the Council hope that in the course of the coming Session the classification may be so far

advanced as to make the Museum of real value to students of arboriculture and silviculture.

THE GEOLOGICAL COLLECTION.

The educational value of the Geological Collection has been added to by the inclusion of a case containing specimens of the building stones in common use in this country. The thanks of the Council are due to the quarry-owners and others who have presented specimens, and to Dr. Henry Woodward, LL.D., F.R.S., for the interest he has shown in arranging the exhibits and in drawing up the comprehensive catalogue which will shortly be available for those wishing to study the different varieties.

THE PROVINCIAL COMMITTEES.

The most noteworthy event under this heading which has taken place during the past year has been the formation of the Surrey Provincial Committee, the whole country, with the exception of the Metropolitan area, being now divided into districts represented by these important bodies. The new Committee already numbers 148 Members, and under the chairmanship of Mr. J. Alfred Eggar meetings have been held which augur well for its prosperity in the future.

The work done by the Provincial Committees in advising the Council as to the qualification of candidates for examination and transfer has been as usual most valuable, and the Council are glad to avail themselves of the opportunity of acknowledging their indebtedness in this respect. In many cases it would be impossible for them without local knowledge to form any

adequate opinion as to the eligibility of a candidate, and they are happy to feel that the Provincial Committees spare no pains to supply them with the information necessary to enable them to arrive at a sound judgment.

The majority of Provincial Committees have also rendered valuable assistance to the Council in their action with regard to various legislative proposals before Parliament, and in the drafting of the suggested Heads of Agricultural Agreement recently issued to Members in connection with the Agricultural Holdings Act, 1906, and since printed in the *Professional Notes* for July, 1907.

The Scottish Committee having reported that in their opinion active steps should be taken to make The Institution more representative of the profession in Scotland, the Council conferred with Mr. Thomas Binnie on the subject, and agreed to enter a number of leading Scotch surveyors for ballot under By-law 3C, which allows the examination to be dispensed with in the case of Candidates (other than surveyors actually practising in England or Wales) whose admission would, in the opinion of the Council, promote the objects of The Institution.

The Council view entry without examination most jealously, and exercise their powers under the by-laws very guardedly. They were happy therefore to note that in the case in question, Members recognising both the advisability of strengthening the Scottish Committee and the high qualifications of the Candidates put forward, corroborated the action of the Council by electing all the Candidates.

TABLE F. PROVINCIAL COMMITTEES.

Committee.	Chairman.	Number of Members.
Northumberland and Durham ...	Sir F. E. Walker	52
Cumberland and Westmoreland ...	H. J. Watson ...	33
Lancashire and Cheshire ...	J. D. Wallis ...	176
Yorkshire ...	C. J. Fox ...	141
Salop and Hereford and Mid-Wales...	H. J. Wyley ...	46
Derby and Stafford ...	C. Harrison ...	64
Nottingham and Lincoln ...	T. W. Huskinson	61
Monmouth and South Wales...	R. Forrest ...	66
Warwick and Worcester ...	J. Willmot ...	85
Leicester, Northampton, and Rutland	A. T. Draper ...	60
Cambridge, Huntingdon, Norfolk, and Suffolk ...	E. W. Beck ...	95
Berks, Bucks, and Oxon ...	W. A. Simmons	89
Beds, Essex, Herts, and Middlesex ...	H. T. Eve ...	202
Devon and Cornwall ...	J. G. Drew ...	81
Somerset, Glo'ster, and North Wilts	P. Addie ...	92
Hants, Dorset, and South Wilts ...	E. Duke ...	163
Kent ...	H. M. Cobb ...	161
Surrey ...	J. A. Eggar ...	148
Sussex ...	W. F. Ingram ...	100
North Wales ...	W. C. Pickering	16
Irish Committee ...	E. S. Darley ...	186
Scottish Committee ...	J. I. Davidson	84

LECTURES TO PROVINCIAL COMMITTEES.

The Council's offer to provide lectures by experts on subjects of professional interest at Meetings of Provincial Committees has been taken advantage of on four occasions during the year, as shown in the following table, the Agricultural Holdings Act, and the Small Holdings Act, having provided other matter for discussion. In the cases where lectures were delivered, the Council are pleased to learn that good attendances were obtained, and a satisfactory addition to the interest in the Meeting was exhibited.

Provincial Committee.	Subject of Lecture.
Yorkshire	The Law affecting Highways.
Lancashire and Cheshire ...	The Law affecting Highways.
Cumberland and Westmoreland	The Taxation of Ground Values.
Beds, Essex, Herts, and Middlesex	The Agricultural Holdings (Consolidation) Bill.

The Council would remind newly-elected Provincial Chairmen that their offer still holds good, and they would suggest that those desirous of obtaining lecturers should give the Secretary notice as long as possible beforehand, in order that he may be able to make suitable arrangements.

THE COLONIAL CONFERENCE.

One of the subjects put down for discussion at the Colonial Conference of 1907 was as to the desirability of establishing reciprocity between the respective Governments and examining authorities throughout the Empire with regard to the examination and authorisation of land surveyors, so that any surveyor who has properly complied with the tests and conditions prescribed by the Imperial Government or the Government of any self-governing dependency, and has duly received the requisite authority to enable him to act as surveyor, should be permitted to practise his profession in any other part of the Empire, subject only to his satisfying the Government or examining authority of the country in which he desires to practise of

his knowledge of the local Acts or regulations relating to the survey of land.

The Council of The Institution at the request of the Secretary of State for the Colonies drew up a memorandum on the subject, which was duly laid before the Colonial Premiers and discussed at the Conference, the following resolution being passed :

“ That it is desirable that reciprocity should be
“ established between the respective Governments and
“ examining authorities throughout the Empire with
“ regard to the examination and authorisation of land
“ surveyors, and that the Memorandum of The Sur-
“ veyors’ Institution on this subject be commended to
“ the favourable consideration of the several Govern-
“ ments.”

The Council hope that at the next Colonial Conference a system of reciprocity on the lines advocated in their Memorandum may be definitely set up.

MISCELLANEOUS.

During the present Parliamentary Session four Government Bills of primary importance to surveyors have been introduced in the House of Commons, viz. : the Land Values (Scotland) Bill, the Small Landholders (Scotland) Bill, the Licensing Bill, and the Housing, Town Planning, &c., Bill. The first was the subject of inquiry by a Select Committee of the House of Commons last Session, and the views of the profession were then made known by the evidence given by Mr. Thomas Binnie and Mr. William Fraser, and by memoranda drawn up by Mr. Howard Martin and Mr. J. H. Sabin for the use of the Committee. The Council therefore did not think

it necessary on the second introduction of the Bill to give further expression to their views.

In the case of the Small Landholders (Scotland) Bill, and the Housing, Town Planning, &c., Bill, however, they considered that the views of the Council, based upon technical knowledge and experience, should be made known, and in each case a memorandum was drawn up and placed before the Department concerned and others interested. Copies of these memoranda will be found in the *Professional Notes*.

The Licensing Bill, though closely affecting the value of real estate, is so intimately connected with social and political questions that the Council have refrained from offering any observations thereon.

In the House of Lords, the President of the Board of Agriculture and Fisheries has introduced Bills consolidating the Agricultural Holdings and the Small Holdings and Allotments Acts. These measures will be welcomed by all surveyors whose practice embraces the management of agricultural estates.

ADDENDUM.

The Annual Country Meeting was held, by invitation of the Kent Provincial Committee, at Dover on the 21st and 22nd of May, 1908. The Members attending were met in the historic Maison Dieu of Dover by His Worship the Mayor, Mr. Walter Emden (Associate), who, in an address of welcome on behalf of the Corporation of

the Premier Cinque Port, expressed the pleasure with which they received in their midst the representatives of so important a body as The Surveyors' Institution.

The town which he had the honour to represent was developed long before any systematic attempt at planning was thought of, but the exigencies of the situation and the incidents of its gradual growth between the hills and the sea had, he believed, produced a more picturesque result than would be possible under any organised system.

The President, Mr. Thomas Taylor Wainwright, having thanked the Mayor for the cordial reception extended to the Members of The Institution, then took the Chair in the Connaught Hall adjoining the Maison Dieu, and the following Papers were read and discussed:—

1. "Dover, a Historical Survey," by Mr. Martyn Mowll, Register of the Dover Harbour Board;
2. "The Hydrogeology of the Dover Basin, Dover Harbour, and the Channel Tunnel; the position of the Kent Coalfield," by Joseph Lucas (Professional Associate);
3. "The Past, Present, and Future of the Hop "Industry," by Professor M. J. R. Dunstan, M.A. (Principal of the South Eastern Agricultural College, Wye).

In the unavoidable absence of Professor Dunstan, his Paper was read by Professor Theobald of Wye College.

The rest of the morning was devoted to the discussion of the Papers, and cordial votes of thanks were passed to the authors.

The Members and invited guests then proceeded to the Burlington Hotel where they were hospitably

entertained at luncheon by the Kent Provincial Committee.

In the afternoon visits were made (by the courtesy of H.M. Admiralty, the Dover Harbour Board, and Messrs. Pearson and Son) to inspect the great harbour works in progress, Members being conveyed by the contractors' train to the end of the Eastern Extension, and by the Harbour Board's fine tugs "Lady Curzon" and "Lady Crundall" to view the works from the sea.

The Mayor afterwards entertained the party at tea at the Lord Warden Hotel.

Other Members visited, by special permission of the Officer in Command, the ancient Castle and Fortress of Dover.

Later the Members dined together in the Connaught Hall, the President being in the Chair supported by the President-Elect and many Members of the Council, among the guests being Sir Robert Filmer, Bart., the Mayor of Dover, the Mayor of Calais (M. Léon Lateux), Sir William Crundall (Chairman of the Dover Harbour Board), M. Bourgoin (Vice-President Société des Géomètres Experts de France), M. Sanguet (of the same Société), the Mayor of Maidstone, and several of the officials of the Admiralty and Harbour Board.

The presence of The Institution's French guests was particularly welcome in view of the pending visit of the President of the French Republic, the toast of whose health was responded to by the Mayor of Calais.

For Friday, the 22nd May, two excursions were arranged. About 60 of the Members went under the guidance of Mr. H. Hayward by steamer to Calais, where they had luncheon, the majority then proceeding by train to Boulogne-sur-Mer. Here, under the guidance of Mr. H. F. Farmer, British Vice-Consul, they spent an

enjoyable afternoon in viewing the ramparts, the Cathedral, and others of the many points of interest in the old town and the more modern Boulogne.

Reassembling at the station they dined together, being honoured by the presence of the Mayor of Boulogne, who welcomed the visitors in a short speech. The Members left Boulogne for Folkestone at 7.10, proceeding thence by boat train to London.

Another party left Dover at 9.15 for Canterbury and Chatham Dockyard, under the the guidance of Mr. H. M. Cobb and Mr. T. Wachter.

Arriving at Canterbury they first visited St. Martin's Church where according to tradition King Ethelbert was baptised, the font being still shown to visitors. The date of this interesting building is uncertain, but divine worship is known to have been carried on within its walls for at least thirteen centuries.

On proceeding to the Cathedral the party was met by Canon Stuart, the Vice-Dean, who conducted them through the sacred edifice, and, in pointing out its many architectural beauties, gave an interesting account of its historical and archæological connections from its foundation in Roman times. The Institution was fortunate in having a guide so well versed as is Canon Stuart in the antiquities and spirit of the Cathedral.

At mid-day train was taken for Chatham, saloon carriages being attached to the ordinary train by the Railway Company and luncheon being served en route. The Members alighted at New Brompton and were conveyed by special trams to the Dockyard, where by the courtesy of Admiral George Giffard, C.M.G., they were shown round the electrical shops and other places of interest, completing a most successful excursion by a

visit to H.M.S. Cressy, a first-class cruiser of 12,000 tons and 21,000 horse-power.

Fine weather throughout the visit enabled the Members to take full advantage of the arrangements for their comfort and enjoyment which had been made by the Kent Provincial Committee, to whom the Council wish to express their hearty thanks.

They are fully aware that the organisation of such a gathering entails a very considerable amount of work and a serious sacrifice of valuable time on the part of the local organising Committee, and they feel that the thanks of all the Members who joined in the visit are due especially to the Chairman of the Kent Committee (Mr. H. M. Cobb), to Mr. Henry Hayward, whose arrangements contributed so much to the success of the meeting, to Mr. A. T. Walmisley in connection with the visit to the Harbour Works, and to the other members of the Committee who courteously placed their local knowledge at the disposal of the visiting Members.

The thanks of the Council and Members are also due to the Corporation of Dover for the use of the Town Hall for the Business Meetings and the Dinner, to the Mayor for his courtesy and hospitality, to Sir William Crundall and the officials of the Dover Harbour Board and the Admiralty, as well as to Captain Iron and Messrs. Pearson for the facilities afforded for inspecting the Harbour works, to Mr. H. F. Farmer, British Vice-Consul, for his reception of the Members at Boulogne, to Canon Stuart for his guidance at Canterbury Cathedral, and to the Committees of the Dover Club and the Cinque Ports Yacht Club for the hospitality extended to Members during the visit.

Especial thanks are due to Mr. Martyn Mowll for his interesting historical account of Dover, and to Mr. J.

Lucas and Professor Dunstan for the Papers which they contributed.

The Meeting was in every way a successful one, and the Members of the local Reception Committee are to be congratulated on the result of their labours.

		BALANCE SHEET	
1907.	ASSETS.		
		£ s. d.	£ s. d.
CASH at Bankers and in hands of Secretary :—			
Deposit Account	...	500 0 0	
Current Account (including £50 Petty Cash)	...	217 7 11	
Library, Forestry, and Geological Account	...	480 9 7	
"Prize Endowment" Capital Account	...	0 14 9	
"Prize Endowment" Income Account	...	89 14 4	
			1,288 6 7
Furniture	...		1,389 16 7
Library, Forestry, and Geological Account	...		5,474 17 10
INVESTMENTS :			
The Premises No. 11, Great George Street, Westminster at cost			
£ s. d.			20,230 19 8
3,314 18 7	India 3% Stock at 89		2,950 5 9
Library, Forestry, and Geological Account.			
£ s. d.			
2,481 6 10	Consols 2½% at 83¼		2,078 2 6
Prize Endowment Account.			
£ s. d.			
503 1 11	India 3% Stock at 89	447 15 1	
278 0 3	Midland Railway 2½% Debenture Stock at 73	202 19 0	
254 0 0	North British Railway No. 1 Preference Stock at 107	271 15 7	
413 16 8	New 2½% Stock at 82¼	340 7 6	
440 10 8	India 3½% Stock at 102	449 6 10	
500 0 0	Courage and Co. 3½% B Debenture Stock at 67½	337 10 0	
			2,049 14 0
Reserve Fund.			
£ s. d.			
3,650 15 8	Consols 2½% at cost price		3,175 6 2
Amounts due, but unpaid at date, viz.:—			
Subscriptions and Entrance Fees	...	685 13 0	
Fees for hire of Rooms	...	117 12 0	
Rent of Offices, &c. (Tribunal of Appeal) ...	...	33 5 0	
Rent of No. 11, Great George Street, S.W. ..	...	225 0 0	
			1,061 10 0
		£39,698 19 1	

N.B.—The above Assets do not include the value of the Institution Premises No. 12, Great George Street, held on a Lease for 999 years from 1895.

31st DECEMBER, 1907.

LIABILITIES.

1907

	£	s.	d.
Accumulations Account	24,351	15	2
Library, Forestry, and Geological Account	8,033	9	11
Prize Endowment Capital Account	2,050	8	9
Prize Endowment Income Account	89	14	4
Examinations Suspense Account	1,107	15	0
Reserve Fund	3,175	6	2
Due to Sundry Creditors	890	9	19

£39,698 19 1

Examined with books, vouchers, &c., and found correct.

TANSLEY WITT, Chartered Accountant.
40, Chancery Lane, W.C., 4th May, 1908.

H. C. NEWMARCH.
STANLEY HICKS.

Auditors.

		RECEIPTS.			FOR THE YEAR ENDED		
		£	s.	d.	£	s.	d.
1907.	To Cash at Bankers and in the hands of Secretary,						
Jan. 1st.	On Current Account including £50 Petty Cash in the hands of the Secretary ...						398 10
Dec. 31st.	RECEIPTS ON INCOME ACCOUNT:—						
	To 1,692 Fellows' Subscriptions at £3 3s.	5,329	16	0			
	„ 66 Fellows' Subscriptions, Arrears at £3 3s. ...	207	18	0			
	„ 21 Fellows' Subscriptions paid in advance for 1908 at £3 3s. ...	66	3	0			
	„ 1 Fellow Reinstated ...	3	3	0			
	„ Differences of Subscriptions on transfer	14	14	0	5,621	14	0
	„ 1,594 Professional Associates', Associates', and Colonial Fellows' Subscriptions at £2 2s. ...	3,347	8	0			
	„ 78 Professional Associates', Associates', and Colonial Fellows', Arrears of Subscriptions at £2 2s. ...	163	16	0			
	„ 1 Professional Associate's part Arrears	1	1	0			
	„ 8 Professional Associates', Associates', and Colonial Fellows' Subscriptions paid in advance for 1908 at £2 2s.	16	16	0			
	„ 3 Professional Associates reinstated at £2 2s. ...	6	6	0	3,535	7	0
	„ 321 Students' Subscriptions at £1 1s.	337	1	0			
	„ 33 Students' Subscriptions paid in advance for 1908 at £1 1s. ...	34	13	0	371	14	0
	„ Hire of Rooms ...				453	1	6
	„ Dividends, Interest, &c. ...				127	2	5
	„ Rent of Leasehold Property, 11, Great George Street, S.W. ...	675	0	0			
	Less Ground Rent on same for 1 year	313	10	0	361	10	0
					10,470	8	1
	EXAMINATIONS ACCOUNT:—						
	To Candidates' Examination Fees ...	1,408	1	0			
	„ Sale of Syllabus ...	44	8	6	1,452	9	6
	Less Examiners' and Moderators' Fees, Hire of Hall, and Sundry Disbursements ...				1,166	6	8
					286	2	1
	RECEIPTS ON CAPITAL ACCOUNT:—						
	To 7 Fellows' Entrance Fees at £5 5s. ...	36	15	0			
	„ 27 Fellows' Difference of Entrance Fees at £2 2s. ...	56	14	0	93	9	0
	„ 238 Professional Associates', Associates', and Colonial Fellows' Entrance Fees at £3 3s. ...				749	14	0
					843	3	
	RESERVE FUND:—						
	To Dividends ...						65 17
	EXAMINATIONS "SUSPENSE" ACCOUNT:—						
	To Examination Fees received ...				460	19	0
	Less Entrance Fees transferred...	205	16	0			
	„ Subscriptions transferred ...	108		0			
	„ Examination Fees transferred ...	117	12	0			
	„ Examination Fee refunded	1	1	0	432	12	0
					28	7	

LIBRARY, FORESTRY, AND

1907.					£	s.	d.
Dec. 31st.	To Purchase of Books, Maps, &c. :—						
	General Library ...	...	£106	0	11		
	Loan Library ...	...	22	14	10		
							128 15 9
„	Amount of Depreciation written off	...	...	...	...	140	7 8
„	Insurance	...	...	...	...	4	14 0
„	Geological Cases, Specimens and Photographs	...	...	...	...	225	17 6
„	Honoraria	...	...	...	...	12	12 0
„	Annual Subscription to London Topographical Society	...	...	...	...	1	1 0
„	Annual Subscription to Palæontographical Society	...	...	...	...	1	1 0
„	Printing	...	...	...	...	12	19 0
„	Decrease in value of Investments	...	...	...	...	55	16 7
„	Balance carried forward*	...	...	...	...	8,033	9 11
*	Cash in hand	...	£	480	9	7	
	£2,481 6s. 10d. Consols 2½%						
	at 83½	...	2,078	2	6		
	Value of Books, Forestry, and						
	Geological Collection	...	5,474	17	10		
						£8,616	14 5

ACCUMULATIONS

1907.				£	s.	d.
Dec. 31st.	To Depreciation on Furniture	...	...	73	0	0
	„ Decrease in value of Investments	...	...	33	10	9
	„ Balance carried forward	...	...	24,351	15	2

£24,458 5 11

GEOLOGICAL ACCOUNT.

1907.					£	s.	d.
Jan. 1st.	By Balance brought forward	...	...	...	8,075	2	6
Dec. 31st.	„ Increased Values at this date, viz.:—						
	Books purchased	...	...	£128 15 9			
	Books presented	...	...	14 3 6			
					142	19	3
	„ Dividends	...	...	...	55	9	8
	„ Donations	...	...	...	343	3	0

£8,616 14 5

1908.							
Jan. 1st.	By Balance brought forward...	...	...	...	£8,033	9	11

ACCOUNT.

1907.					£	s.	d.
Jan. 1st.	By Balance brought forward	...	...	...	22,166	5	8
Dec. 31st.	„ Excess of Income applicable to 1907	£1,662 14 5					
	Less amount transferred to Reserve Fund Account	...	500 0 0				
					1,162	14	5
	„ Excess of Receipts over Payments on Examinations Account	...	...	...	286	2	10
	„ Excess of Receipts over Payments on Capital Account	...	...	...	843	3	0

£24,458 5 11

1908.							
Jan. 1st.	By Balance brought forward	...	...	...	£24,351	15	2

“PRIZE ENDOWMENT”

1907.					<i>£ s. d.</i>
Dec. 31st. To decrease in value of Investments	...	...	...	67	8 6
,, Balance carried forward	...	...	...	2,050	8 9
“Penfold Gift”—					
£503 1 <i>s.</i> 11 <i>d.</i> India 3%					
Stock at 89	447	15	1		
“Beadel Bequest”—					
£278 0 <i>s.</i> 3 <i>d.</i> Midland					
Railway 2½% Debenture					
Stock at 73	202	19	0		
Cash in hand		0	14	9	
“Crawter Bequest”—					
£254 North British Rail-					
way No. 1 Preference					
Stock at 107	271	15	7		
“Daniel Watney Gift”—					
£413 16 <i>s.</i> 8 <i>d.</i> New 2½%					
Annuities at 82¼	340	7	6		
“Driver Bequest”—					
£440 10 <i>s.</i> 8 <i>d.</i> India 3½%					
Stock at 102	449	6	10		
“Galsworthy Gift”—					
£500 Courage & Co. 3½%					
B Debenture Stock at 67½	337	10	0		

£2,117 17 3

“PRIZE ENDOWMENT”

1907.					£	s.	d.
Dec, 31st.	To	Paid for " Beadel Prize "	...	...	5	15	0
	"	Paid for " Driver Prize "	...	...	13	3	2
	"	Paid for " Crawter Prize "	...	...	9	8	1
	"	Paid for " Penfold Prize "	...	...	14	6	8
	"	Paid for " Daniel Watney Prize "	...	...	15	0	0
	"	Paid for " Galsworthy Prize "	...	...	16	14	0
	"	Balance carried forward	...	...	89	14	4
					£164	1	3

CAPITAL ACCOUNT.

1907.				£	s.	d.
Jan. 1st.	By Balance brought forward	...	..	...	2,117	17 3

£2,117 17 3

1908.				£	s.	d.
Jan. 1st.	By Balance brought forward	...	...	...	£2,050	8 9

INCOME ACCOUNT.

1907.				£	s.	d.	£	s.	d.
Jan. 1st.	By Balance brought forward	...	...				91	12	9
	„ Dividends, viz. :—								
	“ Beadel ” Bequest	...	...	7	7	0			
	“ Driver ” Bequest	...	...	14	13	0			
	“ Crawler ” Bequest	...	...	9	13	0			
	“ Penfold ” Gift	...	...	14	6	8			
	“ Daniel Watney ” Gift	...	...	9	16	4			
	“ Galsworthy ” Gift	...	...	16	12	6			
							72	8	6
							£164	1	3

1908.				£	s.	d.
Jan. 1st.	By Balance brought forward	...	...	...	£89	14 4

APPENDIX TO VOL. XL

Obituary.

RUSSELL GARDENER AUSTIN (Fellow) was elected to the Membership of The Institution in 1875, having for many years practised as a civil engineer and surveyor in his native town of Hertford. In 1891 he went to South Africa, where a sunstroke and subsequent partial paralysis incapacitated him, and whence he returned after a stay of some eighteen months. It was not until after some years that he was able again to undertake active work, but eventually he obtained an appointment under the Borough authority of Hertford which he retained until his death in May, 1908, in the 62nd year of his age. In early life he had been a man of somewhat exceptional physical strength and vigour. He was a member of the 1st Herts. Volunteers, and later of the Herts. Yeomanry, and the 1st Herts. Light Horse. He was an ardent lover of sport, and as a young man had many prominent successes in the athletic field, being for three years in succession holder of a challenge cup for a three mile steeplechase. His loss was much felt in Hertford, where his family have long been respected residents.

GEORGE BEKEN (Fellow) died in his 62nd year at his residence at Staplehurst, in June, 1907, after nearly 20 years' membership of The Institution. Mr. BEKEN'S special practice was in dealing with ground rents, a subject on which he was a leading autho-

city and on which he wrote several well recognised works. In 1889 he read a paper before a meeting of The Institution on "The Rating of Ground Rents" (*Transactions*, vol. xxi. pp. 359-381), and at many of the meetings added to the discussions on subjects connected with real property the valuable results of his wide experience in dealings with it. In manner, Mr. BEKEN was eminently straightforward and outspoken, and his utterances carried weight as the clearly expressed views of a man who spoke what he knew, and whose knowledge of his subject was practical and intimate. He was much regarded as an expert witness in property cases, and gave valuable evidence before the Town Holdings Committee of the House of Commons. His devotion to business was remarkable, and his sound judgment caused his assistance and advice to be much sought. Besides his contributions to the *Transactions* and the *Professional Notes* he was the author of works on "Freehold Enfranchisement," "Taxation of Ground Values," "Rating of Ground Values," and kindred subjects.

His death is felt as a great loss to the branch of the profession of which he was undoubtedly one of the heads.

JOHN JAMES BOWMAN (Fellow) was the son of the late Mr. John Bowman of Newtown, Irthington, and acquired his training as an agriculturist under his grandfather. In the "seventies" he entered into partnership in Carlisle with Mr. George Wood, whom he afterwards succeeded as secretary of the East Cumberland Agricultural Society. He soon acquired an extensive practice, and was appointed steward of the Rickerby, Broadfield, Whitehall, Killbow, and other estates

Though an acknowledged authority on stock he did not often act as judge in the show yard.

His conduct of the affairs of the Cumberland Agricultural Society was a conspicuous success, and much valuable work was undertaken which now falls within the province of the Chamber of Agriculture and other bodies. When the society was re established on a broader basis due acknowledgment was made of the services which Mr. BOWMAN had rendered. He was an active member of many of the local and municipal bodies in his neighbourhood, serving as a magistrate and representing his district on the County Council. It has been said of him he was "a good all-round sportsman, "an excellent shot, and a pleasant companion, whose death will be regretted by all who knew him."

Some time before his death, which took place in April, 1908, in the 52nd year of his age, he met with an accident in the hunting field, from the effects of which he never recovered.

FRANK JOHN BREWER (Fellow) died at his residence, Suffield House, Richmond, Surrey, on Christmas Day, 1907, in the 57th year of his age. Although he had for some years been suffering from a painful disease to which he ultimately succumbed, he was at his office within a week before his death. He was a native of Richmond, following the same profession as his father, and had a considerable practice in that town and the neighbourhood as an architect and surveyor. He was at the time of his death a Fellow of the Royal Institute of British Architects, a Fellow of the Surveyors' Institution and a Member of the Society of Architects. He possessed an exceptionally wide knowledge of the

law relating to ancient lights and easements. He was a liveryman of the City of London.

HORACE WILLIAM BULLEY (Fellow) commenced his pupilage with Mr. E. G. Warren of Exeter about 17 years since. As a student he obtained highest results in many examinations, winning in 1903 the bronze medal and the first of the four first class honours then awarded in building construction at South Kensington. After being for some time with Mr. J. German, he joined Messrs. Cameron and Commin of Exeter in designing and superintending the carrying out of many important works, and was closely connected with the City Electricity Station and the Septic Tank Sewage Outfall Works.

SIR WILLIAM ROBERTSON COPLAND, LL.D. (Fellow). By the death, in August, 1907, of Sir WILLIAM COPLAND, The Institution lost one of its most prominent members in Scotland. His courtesy and kindly presence will remain in the minds of all the Members who took part in the visit of The Institution to Glasgow, where within so short a time of his death he took a keen interest in the proceedings and the arrangements for the reception of the visiting Members.

Sir WILLIAM COPLAND was born at Stirling in 1838, and educated at the high school of the town, proceeding later to Glasgow High School and University, where he took first place in mathematics and civil engineering. He then entered the office of Mr. David Smith, C.E., and definitely adopted civil engineering as his profession. After considerable experience in railway work, he occupied, from 1862 to 1866, the position of Burgh Engineer of Paisley, resigning that post to start on his own account as a civil engineer in Glasgow.

He acted as consulting or constructing engineer in connection with many great water and drainage schemes in Great Britain and abroad, and was for many years regarded as a leading authority on questions of water supply, was frequently called as a witness before Parliamentary Committees and Commissions, and had a large experience as arbiter or oversman in disputed claims. He received the honour of knighthood in 1906, and the honorary degree of LL.D. on the occasion of the opening of the extension of Glasgow University.

He died at his residence in Glasgow after a somewhat prolonged period of indifferent health, which, however, did not prevent his giving attention to business until very shortly before his death.

GEORGE RACKSTROW CRICKMAY, F.R.I.B.A. (Fellow), was born in December, 1830, and died in November, 1907, being thus 77 years old. He was Diocesan Surveyor for the Archdeaconry of Dorset from 1872 to 1892, surveyor to the Weymouth estate of Sir F. Johnstone, Bart., since 1872, and manager and surveyor of the Weymouth Waterworks for fifty years. He was a freeman of the City of London and recently master of the Glass Sellers' Company, a prominent mason, and a member of several professional clubs and societies. He carried out many important architectural works and laid out a great number of estates in Dorset, Sussex, Surrey, and near London. He designed several churches, public schools and buildings, hotels, hospitals and commercial offices, and in 1898 his firm was awarded first premium (£150) for designs for the Fylde Workhouse, Lancs.

His loss will be very greatly felt by many of his brethren in both the surveying and the architectural

professions, and by many friends among the Society of Dorset Men in London, which he was instrumental in founding.

HENRY PONSONBY SHAW DARLEY (Captain) J.P. (Fellow), a Member of the Irish Land Agents' Branch of The Institution, who died in January, 1908, after a short illness, was agent for several large estates in Ireland, and during his period of agency had been called upon to face some of the worst agitations. His firm and strictly fair dealing won him the respect and esteem of all classes, and at a special meeting held by the public authority of the district in which he had lived, warm tributes were paid to his purity of purpose and conduct, and sincere regret expressed at the loss of one for whom all had the very greatest esteem, regard, and respect.

WILLIAM ARTHUR DEW (Fellow), born in 1851, was the son and successor of the late Mr. William Dew, a well-known surveyor in Bangor. He was educated at Liverpool College, and articled to Messrs. Mills and Fletcher, surveyors, of Birkenhead, afterwards gaining experience in civil engineering under Mr. Hedworth Lee, at Bangor, and Mr. F. Jackson, at Nottingham. In 1873 he was taken into partnership with his father, and after the death of the latter in 1885, he became sole member of the firm in Bangor, and opened another office in Llandudno. He took considerable interest in the public affairs of his neighbourhood, and after having been more than once a member of the Bangor City Council, was elected Mayor of the Borough in 1892.

He was elected a Fellow of The Surveyors' Institution in 1882, and was from 1906 to the time of his death

Chairman of the North Wales Provincial Committee. He was active in furthering the interests of the North Wales Black Cattle Society, and performed valuable work in editing its *Herd Book*. His death occurred from heart failure after a brief period of illness, largely attributable to pressure of business.

FREKE GUY RASHLEIGH DUKE (Fellow), of Braehead, Kilmarnock, Ayrshire, died at the residence of his father, Canon Duke, at Birlingham Rectory, Worcestershire, in June, 1907, at the age of 47, having been in weak health for some considerable time. He was educated at Bradfield and Oxford, and after gaining experience on the estates of the late Lord Wimborne became, in 1890, factor of the Kilmarnock estate of the Dowager Lady Howard de Walden.

A man of great business capacity and culture, he was a prominent figure in public affairs, and as a Justice of the Peace and chairman or member of many local organisations he rendered valuable service. He was elected a Fellow of The Institution in May, 1890.

FRANCIS WILLIAMS DYMOND (Fellow), son of the late Robert Dymond, was born in Exeter in the year 1825, and died in that city in September, 1907, aged 82 years.

His professional career commenced by his becoming junior partner in the well-known firm of surveyors, Messrs. Robert Dymond and Sons of Exeter.

He was elected a member of the Land Surveyors' Club in the year 1867, and in the following year became a Fellow of The Surveyors' Institution, the number of his diploma certificate being 35.

In the year 1891 he was joined in partnership by the

late H. J. D. Parsons, the firm acting for various railway companies during the construction of the Bristol, Exeter, and South Devon (now the Great Western), the Exe Valley, and the North Devon Railways.

In 1877 he was appointed as Inspector under the Inclosure Commissioners, now the Board of Agriculture and Fisheries, which appointment he resigned in the year 1902, when his late partner was appointed to fill the vacancy. He for many years held the position of local treasurer to the Bath and West and Southern Counties Society in addition to being a Member of Council of that body.

Mr. DYMOND was a recognised authority on the history of the Society of Friends and of their meeting houses, and was a staunch member of that body. He was always generously inclined and took great interest in the local religious, philanthropic, and charitable societies.

CHARLES ROLLS FOSTER (Fellow) was born in 1844, educated in Switzerland and Paris, and articled with Mr. George Neve of Sissinghurst, Kent. He afterwards entered the office of the firm originally established by his grandfather, Mr. E. Foster, nearly a century ago in Greek Street, Soho, and later transferred to Pall Mall. This firm carried out a considerable amount of business for the Metropolitan Board of Works, as well as for owners of London and country properties. But the special feature of Mr. Foster's business was the dealing with fine art collections. Among his firm's noted transactions was the sale of the works of John Constable, R.A., after the artist's death, and the valuation of the John Jones collection now in the Victoria and Albert Museum, South Kensington. He was greatly esteemed

in his profession, and his judgment on all matters connected with art was highly valued. He was elected a Fellow of The Institution in 1872, and died at Hampton Hill in May, 1908, in the 64th year of his age.

CHARLES GOTT (Fellow), of Bradford, was for over half a century identified with the development and progress of that town. Born at Great Grimsby in 1831, he commenced his professional career at Scarborough, and after a period of service in the office of the borough surveyor of Hull he became, in 1855, deputy borough surveyor of Bradford under Mr. E. W. Shaw, on whose resignation in 1856 he was appointed his successor as borough surveyor and waterworks engineer, the Corporation having then recently purchased the undertaking of the Bradford Waterworks Company at a cost of some £215,000. In augmentation of the newly acquired scheme of water supply, Mr. GOTT designed a number of important works and reservoirs, some of them being carried out under exceptional difficulties, but all with complete success in the end.

As borough surveyor, Mr. GOTT had then to perform many duties which would now be placed in the hands of separate officials, being, for example, inspector of nuisances and chief officer of the fire brigade. But his energy and perseverance, combined with a shrewd appreciation of business and a ready facility of meeting and surmounting difficulties, carried him through many difficult times when Bradford was developing from the comparatively small town he found it, to the important and well-regulated borough which he left to testify to his power of organisation and control.

In 1875 he retired from municipal work and devoted his time to private practice, acquiring a wide experience

in arbitration cases as umpire, arbitrator or expert witness, especially in North of England cases.

He was elected a Fellow of The Institution in 1891, and was a Member of the Institution of Civil Engineers and many other professional bodies. He also occupied many civic and parochial positions and was a prominent Mason. His death took place at his residence in March, 1908.

WILLIAM GRAHAM (Fellow) was elected to membership of The Institution in 1875. Born in 1823, he had completed his 85th year when he died in March, 1908. About 1844 he went to Newport, and was appointed agent for the Clytha estate, and subsequently for other important estates. He was elected a member of the Newport Town Council in 1857, and was mayor of that town in 1866. He was keenly interested in the municipal and industrial progress of the town and acted as chairman or director of several local companies.

Throughout his life he was well known for his clear business instincts and capable judgment in all professional matters, and the retention of his faculties even up to the time of his death at an advanced age was remarkable.

JOHN HAMILTON (Fellow) was elected to membership of The Institution in 1890, and practised for many years as an architect and surveyor in the City of London. It has been said of him with truth that, throughout his professional career, "he gave his very "best for the benefit of his clients," and no higher praise could be written of any man. He had a good general

practice, was a prominent Freemason, and at the time of his death Worshipful Master of his Lodge.

He died in June, 1907, aged 62.

EDWIN MAGGS HIPPISELEY (Fellow) was the elder son of the late Mr. Edwin Hippisley of Wells, Somerset, with whom he entered into partnership in 1875, the firm acting for many years past as the local agents for Messrs. Clutton. He had a considerable practice as an architect, and designed many schools and public buildings in his neighbourhood. On his father's death in 1897 he was appointed a dilapidation surveyor for the Diocese of Bath and Wells. He was for many years Chairman of the Somerset, Gloucester, and North Wilts Provincial Committee of The Institution.

In 1905 failing health compelled his retirement from active business, and his death took place at Wells in December, 1907, in the 63rd year of his age.

EDWIN HOGGARTH (Fellow) was elected a Fellow of The Surveyors' Institution in 1891, and died after an operation in December, 1907. He was the son of the late Mr. Henry Hoggarth, and for some 27 years practised, with his brother, as land agent and surveyor, carrying out many important drainage, road-making, and surveying works. His integrity and thoroughness in business gained him the respect of all with whom he was brought in contact, and as an expert in all outdoor games his straightforward and manly play was always appreciated both by his own side and by his opponents. He was a prominent Freemason, and in politics a Conservative, acting since the last general election as

secretary of the local Conservative club. In every relation of life he was everywhere respected and esteemed by all who knew him.

CHARLES HENRY INGE (Fellow), of Broom Leasoe, Whittington, Lichfield, who was elected to membership of The Institution in 1884, died at his residence in January, 1908, in the 75th year of his age. He was head of the firm of Inge and Son, land and estate agents, The Close, Lichfield, and was agent for many estates in Warwickshire. He was also receiver for the Ancient Pendrell Trust, which arose out of the hiding of King Charles II. in the oak at Boscobel. He sat for many years on the County Bench, being senior magistrate in the Lichfield and Brownhills Petty Sessional Division.

GILSON MARTIN, M.V.O., J.P. (Fellow), born in 1829, a son of the late Mr. David Martin of Wainfleet, Lincs., was elected a Member of The Institution in 1876. He had the management of the Duke of Devonshire's estates in Derbyshire and at Bolton Abbey for nearly 30 years, having previously been for many years agent for the Duke of Bedford's estates. He acted during his life for two Dukes of Bedford and three Dukes of Devonshire.

His father having been associated for many years with the Bedford estates in Devonshire, Mr. GILSON MARTIN was appointed in 1866 agent for the Devon, Cornwall, and Dorset estates, and thirteen years later was entrusted with the management of the Duke of Devonshire's estates, comprising a total of some 70,000 acres. Although failing health compelled Mr. MARTIN to give up some of the more onerous of his active

work, he still exercised a personal supervision over the greater part of the estates.

His capacity for organisation was especially manifest on the occasion of the many royal visits to Chatsworth, and the harmonious relations existing between landlord and tenant on the estates under his care were largely the result of his tact and thorough business capacity.

He took little part in public affairs outside his own neighbourhood, where as a churchman and a magistrate he earned the respect and confidence of all with whom he was brought into contact. He died practically at his post in the 79th year of his age. On the occasion of the last visit of King Edward to Chatsworth, His Majesty invested Mr. MARTIN with the Victorian Order, an honour which all who knew the recipient will consider to have been worthily bestowed.

DANIEL MUNRO (Fellow) of Hope Street, Glasgow, was born in 1833, elected a Member of The Institution in 1891, and died in 1907 at the age of 74. He received his education at the Glasgow High School and the Old University in the High Street, and for many years carried on the business of a property agent and valuator in his native city. He took a keen interest in all parochial matters and, previous to the union of the old Gorbals and Govan Boards, occupied the position of chairman to each of these bodies. He was a member of the Glasgow University Council and was connected with the control of various benevolent and public committees. His services were frequently sought as arbitrator in property cases, and as a valuator he acted for several railway companies, including the Subway Company, the Clydebank Railway, &c.

JOHN HUTCHINSON FIENNES PEPPERCORN (Fellow) was born in 1837, and educated at Uppingham School, and at the Royal Agricultural College, Cirencester. He received his professional training in the office of the late Mr. Charles Bidwell of Ely, and succeeded his father in the management of several large estates, including those of Lord Saye and Sele and the Earl of Sandwich, besides holding appointments in Huntingdonshire, Lincolnshire, and Yorkshire. He was elected a Fellow of The Institution in 1876. At one time he farmed on an extensive scale both for his clients and on his own account, but ill health compelled him practically to retire from active business some years before his death, which occurred in August, 1907.

HENRY POSTON (Fellow), architect and surveyor, was elected to membership of The Institution in 1891, and died at the age of 58, in May, 1908. Mr. POSTON designed and carried out many business and manufacturing premises, principally in the eastern and north-eastern environs of London, besides a river wall and lime and cement works at Isleworth, many depôts for the London Parcels Delivery Company, and several large hotels.

JAMES DODWELL ROBINSON, Major (Fellow), of Seamount, Sligo, Ireland, was among the members of the Irish Land Agents' Association when that body was incorporated with The Institution in 1895. The deceased Member belonged to an old and well-known co. Sligo family, and was a partner in the firm of Messrs. R. G. and J. D. Robinson, land agents.

His death occurred in London, whither he had gone

for the purpose of undergoing an operation, which, unhappily, was not successful.

WILLIAM HENRY ROBINS, A.M.INST.C.E. (Fellow), was born in Birmingham in 1847. He served articles under his uncle, Mr. Ebenezer Robins, a member of a firm well known in the Midlands, and having an extensive practice as land agents, surveyors, and auctioneers. Under this firm he undertook the whole of the engineering and survey work and was employed in the development of many large estates. At the dissolution of the firm on the death of his uncle in 1871, Mr. ROBINS commenced practice on his own account as a civil engineer and surveyor, being frequently engaged on extensive public schemes and in the designing and carrying out of Parliamentary works, tramways, sewerage and sewage disposal works, river diversions, weirs, &c.

He was elected a Fellow of The Institution in 1881, and died, as the result of an attack of bronchial pneumonia, in December, 1907.

THOMAS SCAMMELL (Fellow), of Bristol, was elected an Associate of The Institution in 1883, and transferred to the Fellowship in 1892. He was the son of Mr. Joseph Scammell of Southdown and Moyle's Court, Hants., and for many years held the position of chief surveyor to Messrs. Sturge and Sons of Bristol.

In 1887 he started on his own account and did much important and responsible work for the municipal authorities in connection with the scheme for the extension of the boundaries of Bristol, as well as in connection with the surveys necessary under the Bristol Corporation Act.

He also carried out extensive alterations and erections for the Bristol Brewery Company.

His death occurred in December, 1907, as the result of what was at first regarded as only a temporary indisposition.

ALFRED HENRY WYNNE (Fellow) was a prominent Member of the Irish branch of The Institution, and an ex-Chairman of that body. He was a graduate of Cirencester College, and completed his professional training with the firm of Messrs. Stewart and Kincaid of Dublin.

He managed extensive estates in the counties of Wicklow, Wexford, Meath, Cavan, Louth, and Cork, for the sale of which he successfully negotiated under the Land Purchase Act, 1903. The development of the Burnaby estate at Greystones was one of his greatest successes. Twenty years ago Greystones was a small village on the Dublin, Wicklow, and Wexford Railway, consisting of only a few scattered houses. To-day it is one of the most fashionable and flourishing seaside resorts in Ireland, with many fine residences and excellent hotels.

In his early days Mr. WYNNE was a keen yachtsman. His interest in and knowledge of geology and chemistry made his advice particularly valuable in questions relating to land management and development ; his counsel with regard to cultivation being always highly appreciated by farmers.

His loss will be felt by a large circle of professional and personal friends, and more particularly by the poor in the neighbourhood of Collon, co. Louth, where he resided for many years, and where his help was never sought in vain by those in distress or difficulty.

WILLIAM WOOD (Fellow) was born in 1836, at Court Lodge, Cuxton, near Rochester, and was for many years engaged in farming in the neighbourhood. About 24 years ago he commenced the business of land agent and auctioneer, and 12 years later gave up farming to devote himself entirely to this work. He was elected a Fellow of The Institution in March, 1891, and died somewhat suddenly from an apoplectic stroke in April, 1908. He was a man of great business energy and capacity, and his genial disposition and unimpeachable integrity made him justly popular among the large circle with whom his business dealings brought him into contact.

ROBERT F. VALLANCE, F.R.I.B.A. (Fellow), Borough Surveyor of Mansfield since 1884, died in April, 1908, in the fifty-first year of his age. Mr. VALLANCE had been elected President of the Society of Architects, whose June Meeting was arranged to take place at Mansfield. He carried out several important works in Mansfield, designing the Hospital and other public buildings, and was responsible for many schemes of street widening, sewerage, and other public improvements. He stood high among the Freemasons of his district, and took a keen interest in all athletic sports. He was seized with illness in London, and on his return home succumbed to heart failure.

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